# Machine Tool Blue Book

AUGUST, 1931

TWENTY-SIXTH YEAR

## Quick As Wink

VALVE COUPLING

## of Air at Each Coupling

Quick-As-Wink Valve Coupling gives positive, complete control of the air anywhere between compressor and tool.

It is a natural outgrowth of twenty years experience making quick-acting couplings. Now, with the valve and coupling. Now, the operator can shut off or turn on the air at any coupling. When air is "on" coupling is securely locked. When air is mut off, all pressure beyond that valve coupling is automatically bled.

Strongly designed and accurately made, with essential parts of stainless steel, Quick-As-Wink Valve Couplings will last indefinitely. They have been in outdoor service thruice and rain and dit; they have been operated over 750,000 times on a special testing machine and they continue to hold air at 83 to 150.



pounds pressure with no signs of wear. Wherever air is used under pressure, Qaick-As-Wink Valve Coupling will save time and money. They are made in ¼ to ¼ inch sizes with dapters to fit hose or pipe and they are sold by leading contractor, foundry, mill, mine and manufacturers supply houses.

If your regular supply house does not have them in stock, send us his name, and we will send complete information to you direct.

Write for special folder covering Quick-As-Winh couplings and elbows.

Made in all sizes, 1/2 to 4 inch, for air or water bose or pipe.

#### C. B. HUNT & SON

647 McKinley Ave.,

SALEM, OHIO

MAKERS OF QUICK-AS-WINK

MOSE COUPLINGS BUFFING WHEELS

## HANNIFIN

"PACK-LESS" AIR CONTROL



**VALVES** 

Models "V" and "P" Hand Control Valves

Furnished in three sizes— with ¼º, ½º and ¾º I. P. Connections.

ANNIFIN Valves are the result of 23 years of specialized experience in design and manufacture of air equipment. They combine simplicity of design, rugged construction and superior workmanship. In their design, packing has been eliminated, thus assuring a leak-proof valve with no maintenance expense.

Construction comprises a semi-steel body with an accurately machined seat through which air ports are bored. A heavy bronze disc controls direction of air flow. Faces of the disc and valve seat are ground and lapped, making a perfect seal.

Write for Catalog illustrating Hannifin Air-Operated Production Equipment.

#### HANNIFIN MANUFACTURING

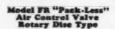
621 So. Kolmar Ave.,

CHICAGO, ILL.

Model FS "Pack-Less" Air Control Valve Disc Type Spring Return Foot Model,

simply and sturdily made of semi-steel in 3 sizes-14".12" and 34". 450 movement. A "Pack-Less" valve same construction as

and type shown above.



For heavy duty foot control of Arbor and Riveting Presses—large non-rotating cylinder. 34° size only—choice of reducing bushings.



## Machine Tool Blue Book

Selected Circulation

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25,500 Monthly

AUGUST, 1931

TWENTY-SIXTH YEAR

#### Foreign Importer Circulation

The "Blue Book" is mailed monthly to importers of metal-working machinery in 28 foreign countries.

We have been asked how such circulation can be effective when the "Blue Book" is printed in only one language.

It is because all of the foreign importers to whom we send the "Blue Book" correspond in English.

They are also rated as "large" or "very large," and they are now importing or have expressed themselves as favorably inclined toward American products.

The "Blue Book" provides worth-while advertising for any manufacturer of metal-working machinery who is seeking an outlet through foreign dealers.

One of our advertisers wrote us only a short while ago: "We get inquiries from all over the world."

#### Published By

#### Hitchcock Publishing Co. 508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements



#### IT'S NO SECRET---

THAT there are times when a solid adjustable tap can be used to better advantage than a collapsible tap—such as long shank tapping of nuts and similar work. In such cases we recommend the NAMCO "SA" Solid Adjustable Tap.

Chasers are interchangeable with regular NAMCO collapsible tap chasers. "SA" taps are made in eleven stock sizes—1\* to 4%\* cutting capacity. Use NAMCO "SA" Taps for Accuracy, Rigidity, and Economy where the room is limited. Special sizes to order.

Bulletin TDS-B gives complete details.

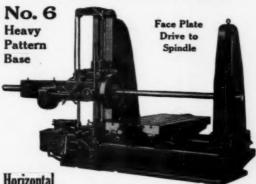
### The National Acme Co.

General Offices and Plant at Cleveland, Ohio



Branch Offices
New York, Chicago

## The New Improved **DEFIANCE**



#### Boring, Milling, Drilling and Tapping Machine

The Defiance Line of Horizontal Boring Mills embodies many special features including independent rapid traverse to head and platen in all directions, moving 84" per minute; thoroughly enclosed head; forced feed lubrication; centralized control; unit construction of head, feed and speed boxes, and many more efficient aids to production. Simplicity, great strength and ample power enable you to handle a wide range of work with profit.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines. Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

#### The Defiance Machine Works Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and Special Woodworking Machinery



### A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

#### More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.



## Don't Forget-

Wood, Fibre, Rubber, Paper, Mica, Bakelite

as well as the ordinary metals can be drilled to advantage on the Leland-Gifford Super-High-Speed **Ball Bearing** Drilling

Machine



Write us about this Drill to speed your drilling operations.

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CINICAGO CLEVELAND DETROIT NEW YORK PITTSBURGH ROCHESTER

**AGENTS** 

th Booth Usher Co., Herberts-Moore Machinery Co., San Franci F. F. Barber Machinery Co.

LELAND-GIFFORD

## BETTER BUSINESS AHEAD,

#### —IT'S TIME TO GET READY

#### COMPETITION WILL BE KEENER

WHO WILL LEAD? He Who Gives Most Value.

HOW CAN HE GIVE MORE VALUE? By Producing at Lower Cost.

HOW WILL HE GET LOWER COST? BETTER EQUIPMENT—Better Methods.

THERE WILL BE A NEW YARDSTICK OF VALUE, SOME WILL MAKE MONEY—OTHERS LOSE

EXCESSIVE COST IS THE FOE OF PROFITS PROFITS ARE WHAT YOU NEED

#### LOOK 'EM OVER

It will pay to look over your equipment; chances are you've got machines 8 or 10 years old that are out of date.

OLD MACHINES, OLD METHODS, OLD RESULTS WONT DO.

#### UP ON YOUR TOES

... Do it Faster ... Do it Better ... Do it Cheaper ...



There are a lot of new things in drilling. There are a lot of ways that two holes can be drilled at the former cost of one.

Let us send you our Bulletin "IS YOUR DRILLING DEPART-MENT NEGLECTED" showing latest developments in Drilling Machines, Automatics, Motor Units, Tappers.

TELL US YOUR PROBLEM . . ASK FOR INFORMATION.

THE AVEY DRILLING MACHINE CO., CINCINNATI

## GRINDING WHEELS

NEW PROCESS
LOWER PRICES
QUICK DELIVERIES

A QUALITY PRODUCT

Send for Our Price List and Discounts.

THE CINCINNATI
ABRASIVE WHEEL CO.
COVINGTON, KY.

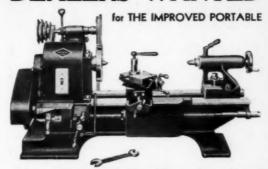
with a NEW Modern Motor Driven Pataliace Replace the old model Bench Lathe



Attachments
and
Accessories
interchange
with
old model

HARDINGE BROTHERS, Inc., a. CHICAGO, ILL.

### DEALERS WANTED



## ARTISAN

## Bench Lathe

#### STURDY-RIGID-VERSATILE

THE IMPROVED ARTISAN BENCH LATHE is extremely versatile and will handle a greater variety of work than any other bench lathe made. Bar stock or automobile axles up to 1-5/s 'diameter can be passed through the spindle for tapering or threading; passenger car axles over 30° long can be machined. Right or left-hand screw threads can be cut 6 to 224 per inch, including 11½ thread for pipe work.

Screw Cutting
Quick Change
"V" Belt Drive
11" Swing—18" between Centers

8 Spindle Speeds
Back Geared

1/3 H. P. Reversible Type Motor
Power from Light Socket

Write for Full Details and Low Price

#### **ROCKY MOUNTAIN STEEL PRODUCTS**

1358 Wall Street,

Los Angeles, California

Also Manufacturers of the "Improved ARTISAN" Master Lathe, floor type model, 36" between centers, swings 16" in gap.

Watch Out for the High Cost of the Low Price

## THE CONWAY Compression Clutch



Full Floating Friction Band— Large Lever Ratio One Point, Accessible Adjustment

(One nut takes up for wear, and the regulation is made directly on the friction band, the wearing member.)

Full Peripheral Contact—No rubbing when released—(the friction band through its high resiliency, springs back into a concentric seat, when the clutch is disengaged, and rubbing on the loose member is impossible.)

Most economical per H. P. hour.

Have Our Engineering Dept. supply you with bulletin No. 35, and some facts about Conway Compression Clutch performance.

The splendid CONWAY DISC CLUTCH is also manufactured by the Conway Clutch Company.



The Conway Clutch Co. 1541 Queen City Ave., Cincinnati, Ohio





-in one operation

Sections such as those shown here are but a few of the almost unlimited variety that can be produced faster and cheaper by roll-forming.

McKinney Roll-Forming Machines where been designed not only to form such shapes continuously and rapidly, but also to curve, punch, emboss, or otherwise process them at the same time, and automatically cut them to the length, in one continuous operation.

Whatever the material, if the shape machines offer advantages which mean quicker set-ups and smoother operation as well as decisive savings in production costs.

Write for descriptive bulletin today

The McKinney Tool & Mrg. Co. 1688 Arabella Road, Cleveland, O.



### A New Universal Tool Grinder—The No. 2



#### Just the Grinder You've Been Looking For!

SPEED UP your cutter grinding with a SURFACER No. 2 Universal Cutter Grinder. It is extremely simple to operate and is quicky set up for any cutting tool. It has a large capacity, centers are adjustable to 14½°; cutters 6° diameter, 9° long; universal attachment, vertically, grinds saws and cutters to 16° diameter.

Your tool crib attendant can sharpen all types of cutting tools on this grinder, converting his non-productive time to tool maintenance. The grinder is portable and therefore takes up no valuable floor space.

The low cost of the No. 2 Cutter enables it to pay for itself in a very short time. Every shop can afford to install it as it sells for many times less than other grinders that do the same precision work. It will pay you to investigate the SURFACER No. 2 Grinder.

If Your Machinery Dealer Cannot Supply You, Write Us Today for Complete Information and Prices

The Surfacer Manufacturing Co. 2454 Irving Park Blvd., CHICAGO, ILL.

## Type A. C. "STANDARD" Spot Welder



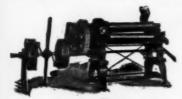
#### Positively the Lowest Priced Spot Welder Built, Quality Considered

7½ K. V. A. 2\* horns with water cooled points. 6\* and 12\* throat Swivel treadle 6 step regulation

Send samples or blue prints for quotation on special equipment. We can save you money.

The Lenney Machine & Manufacturing Company Warren, Ohio

## **BELOIT**BENDING ROLLS



Initial Type (as shown) or Pyramid Type

#### Always Ready For the Job--Year In--Year Out

Proof from Our Files

Write for the BELOIT Catalog, including in addition to the Bending Rolls, complete descriptions of our Punches and Shears, beth Hand and Power Types.

From a Large Railway System:

"The No. 3-G Rolls were installed in our sheet metal department and used principally on locomotive jacket work . . . especially useful in taking dents and distortions out of same and are entirely satisfactory for other purposes."

A Machinery Company in Michigan:

"We have had one of your No. 3-F Rolls in use in our plant for about nine years and same has given us very good service . . . is still in good working order."

A Sheet Metal Company (after 10 years of Service):
"Our No. 3-E Initial Type Bending Roll is
O. K. Still doing its job. No complaints—but
plenty of compliments."

We will gladly furnish names and addresses at your request—and if you are interested in efficient, cost reducing machines we can probably furnish you with names of firms in your vicinity who are using BELOIT Bending Rolls.

HENDLEY & WHITTEMORE CO. 100 So. State St., BELOIT, WIS

**PUNCHES -- SHEARS -- BENDING ROLLS** 

## SUPERIOR



Single Spindle Hand Milling Machine

> Can be Used for Vertical or Horizontal Milling

#### **Great Range and Adaptability**

This SUPERIOR Milling Machine is equipped with a vertical head which is adjustable at any angle, and is readily removable so that the machine can be used as either a vertical or horizontal mill of very great range and adaptability. Has built-in friction countershaft, and is arranged to run direct from the line shaft, or with motor drive. Pump and tank for cutting compound can be added if desired.

Write Today for Full Details of this Versatile Miller

We are also Designers and Manufacturers of Special Machinery, Tools, Dies, etc., as well as of Experimental and Model Work.

Superior Machine & Engineering Co.
1920 Ferry Park, Pr. Detroit, Mich.



#### "The Good Mechanic's Choice"

Full power under heavy, continuous drilling! Cool running! Quiet! Light weight! Unusually long, trouble-free life! Easy to handle! These are the reasons why good mechanic's prefer U. S. Portable Electric Drills—have ever since U. S. brought out the world's first portable electric drill over thirty years ago. They are always the choice wherever drills are selected by impartial, comparative tests. Above is the U. S. ½-inch Special Drill—exceptionally fine for all purpose work. At your distributor's or jobber's, only --

#### The Broadest Line

There's a U. S. Portable Electric Drill for every purpose—it's the world's broadest line. Ask your distributor



for new, free catalog showing the whole line, and the many splendid and exclusive U. S. features. At left is the finest ¼-inch drill ever built. At your distributor's, only - \$30

## The United States Electrical Tool Co. 2461 W. Sixth St., Dept. D. Cincinnati, Ohio

Canadian Division-MAPLE LEAF ELECTRIC TOOLS, Ltd. - Toronto

## A Combination GRINDER

WITH A MULTITUDE OF USES --



2 H.P., 3 Phase, 220 or 440 volts. 1800 R.P.M. at 60 cycle. 40" C Rise Constant Duty. Nine motor leads are brought out in switch box for ready connection to either 220 or 440 volts. Diameter of spindle at wheel, 1½". Equipped with 14"x2" grinding wheel. Net weight of Grinder, 167 pounds; 200 crated. Height 15½", Width of base 9½", Width of Guard 15". Net weight of Base, 46 pounds. Shipping weight, boxed 290 lbs., crated, 260 lbs. (Can be furnished in 110 or 220 volt D.C.)

A Sales Representation Is Open in a Few Localities

#### STOODY COMPANY

MANUFACTURERS

WHITTIER, CALIFORNIA

#### Norgren Sight Feed Automatic Air Line Lubricator



## APPROVED!

Eight Leading Trade Journals Have Given The Norgren Lubricator Editorial Presentation.

More Than Fifty Nationally Known Manufacturers Are Using Norgren Lubricators As Standard Equipment Or Plant Equipment.

(Names Furnished on Request)

The NORGREN Sight Feed Automatic Air Line Lubricator provides a simple means of injecting lubricant into the air stream of gneumatically operated tools. Adjustable to any demand. Entirely automatic. No working parts.

You cannot FORGET to shut off the NORGREN Lubricator. You cannot FORGET to turn it on.

Ten days FREE TRIAL to any firm having satisfactory rating.

#### Norgren Industrial Hose Couplings For Air, Water, Grease





#### SIMPLE-NEAT-EFFECTIVE

Positively will stand the bursting pressure of the hose. Concentric grip and seal prevents injury to the hose and protects hose end from destructive action of greeae, oil, water.

Can be removed and re-applied whenever necessary.

#### Manufactured by

CARL A. NORGREN CO., - Denver, Colorado MANUFACTURERS OF Strainers. Blow-Valves, Blow-Guns, Air Chucks, Engine Cleaners, and Patented Couplings for Industrial, Acytelene, Service, Hi-Pressure Gress and Metal Lined Paint Hose.

Eastern Distributor-J. N. Fauver Co., 31 Brady St., Detroit, Mich.

## WORTHY OF YOUR HIRE

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#### Tool Post or Center Grinders

For internal grinding and grinding of centers, cutters, dies, reamers, etc., in lathe, milling machine, shaper or planer. Sizes 6\* and 8\* wheels. ¼-½ H. P.



#### Drills-Grinders-Buffers-Polishers



## 0

#### Combination Grinders and Buffers

G. E. Motors and SKF ball bearings. High grade nickel steel shaft. Made in four sizes. 1/2, 1, 2, and 3 H. P.

The 2 and 3 H. P. are fitted with Push Button Control. Also made in Bench Type.

Catalog on request

## The Standard Electrical Tool Co.

Standardize with Standard Tools

Fits any RIBOID Type Cutter



#### "Cuttin' Fool"

IGHT through the pipe, like a putty knife through putty-cut after cut, quick, clean, scarcely a trace of burr. You get super-cutting with this RIMID thin blue blade of supersteel, and hundreds of extra cuts per blade. Steel reinforced housing guaranteed against break or warp. Made in sizes 1, 2, 3, 4; capacities 1/8" to 4".

Let your men try a RIBOID Cutter.

Your Jobber has also RIBOID Pipe Wrenches, Vises and Threaders.



THE RIDGE TOOL COMPANY DEPT. BB

ELYRIA, OHIO





We are asked

## KELLERFLEX

WHY does the Kellerslex stand up so well under severest operating conditions. Why does it do a perfect finishing job quickly, easily and most economically.

The answer is simple: A variety of speeds allows the use of the correct tool at maximum cutting capacity. The ball bearing motor is full-sized, not a midget. The shaft is genuinely flexible. And the hand piece—ball bearing or Timken roller bearing equipped. Significant is the motor and shaft, adjusting themselves automatically to the position of the work. Flawless construction throughout.

In short, a most efficient, compact, long-lived machine for economical grinding, filing, sanding and polishing.

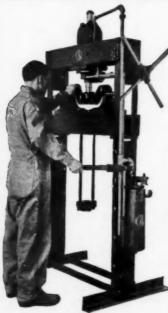
Write for further information

Complete stock of Kellerflex Machines, rotary files, grinding wheels and polishers at Chicago and Brooklyn.

KELLER MECHANICAL ENGINEERING CORP. SSA Washington St., Brooklyn, N. Y.

## KRW ARBOR PRESS NEW 1931 MODEL

Many New Improvements for Perfection of Operation and Convenience Gives You All Around Efficiency at Low Cost



A new double acting piston fills cylinder with oil as the ram is brought down by means of the hand wheel of unique design—sliding handles which pull out to the ends greatly increase the leverage.

Side members slotted to permit long bars to pass thru.

35 tons Capacity

Direct to You

\$125.00

F. O. B. Factory

Complete with all attachments as shown

#### K. R. WILSON

10-14 Lock St.,

BUFFALO, N. Y., U.S. A.

K. R. Wilson Shop Equipment Sales Co., Los Angeles, California Export Department: 126 Liberty St., New York City

### The New Type CC Power Screw Press

#### SAVES Many Costly HOURS

This new machine cuts time and labor costs--your toolmaker requires no help in handling dies-it's a One-Man Press! Perfect alignment of punch and die is insured, Rigid, powerful, delivers 100 tons pressure. Push button type switch, conveniently located, enables operator to start, stop or reverse ram without taking eyes off the work. For better work, at the lowest possible cost, use this new Jarecki.

Write for Circular



Also Hand Screw Presses 25 and 80 Ton Pressures

#### Surface Grinder

Is accurate, runs silently without chatter. Both feeds have graduated dial. Has all latest adjustments and attachments.

Details and Price on Request

#### JARECKI MACHINE AND TOOL CO.

GRAND RAPIDS, MICHIGAN

THE HAMMOND AUTOMATIC Tapping Machines are designed to rapidly and efficiently perform drilling, tapping, stud, nut and screw driving operations.



Drilling radius 4' 0"
Capacity ¾" drills, %" taps, ½" studs

Write for full information

The Hammond Manufacturing Co. 7808 Kinsman Road, Cleveland, Ohio

Taylor & Fenn Belt Driven

## No. 12 Spring Press



## UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

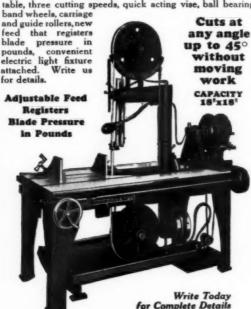
Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 3½ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co. Hartford, Conn., U. S. A.

## MARVEL

The Marvel No. 8 Metal Band Saw is a standard tool in hundreds of the best shops. It cuts off square or any angle right or left to 45 degrees, has big roomy bed or work table, three cutting speeds, quick acting vise, ball bearing



## ARMSTRONG - BLUM MANUFACTURING CO.

341 N. Francisco Ave.,

CHICAGO, ILL.

## WARDWELL

Combination Grinder

-for-

### **BANDS HACKS** AND CIRCULAR SAWS



One years saw purchases can be made to last from six to eight years.

Write for catalog.



The Wardwell Manufacturing Co.

Manufacturers of the largest line of Saw Filers made in U. S. A. 3165 Fulton Road. Cleveland, Ohio

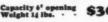
#### **Bay State Handy Vise** Will Save You Time and Money on



Your Miscellaneous Tapping. Drilling and **Grinding Jobs** 

Really a combination tool-vise, angle iron, parallel V-block, clamps-all in one. Light, yet sturdy, constructed of steel throughout, hardened and ground accurately. Grips and handles easily either small or fair sized work—its step jaws hold the work without the bother of using parallels, clamps or other clumsy, time-consuming tools. Write for the illustrated folder which describes this Vise in detail.

### VISE PRICES:



Capacity 4' opening \$25.

## Bay State Hand Tapper



#### Makes the Old Tap Wrench Obsolete!

It's ridiculous for skilled men to waste time with the tap wrench, taking valuable minutes trying to guide the tap-attempting to keep it at right angles with the work-breaking taps and wasting more time removing the pieces.

Especially when the Bay State Tapper requires no setting up and is so simple to operate. You simply place work on table against stop pin, select spindle with size tap needed, insert into bracket sleeve and turn the crank. You can't bracket sleeve and turn the crank. start wrong nor get the tap out of alignment after starting.

Use the Bay State Tapper-eliminate spoilage and tap breakage-cut time and labor costsand insure tapping that is accurate, uniformly true

Write for Description Folder

Bay State Tool & Machine Company 414 Albany St., Springfield, Mass.

## Here-take one



### Free Trial

Only \$25.00 after it shows what it saves

Madison-Kipp Air Tools—Filer—Chipper—and AG Grinder—cost only \$25.00 each, and frequently save that much in a week. They relieve high-priced tool-room workers of the arduous, costly jobs of finishing by hand to close tolerances in inaccessible places.

One or all of these Kipp Air Tools sent on free trial for ten days to any firm having a satisfactory credit rating. You are under absolutely no expense until you have tried them and seen what they can do.

In the drive on costs, that faces every plant today — you need these tools... Mark your selection in the order blank below... send no money.

ORDER BLANK	CHECK MODEL DESIRED				
MADISON - KIPP CORP'N		Air Pressures		Priced in U.S.A.	
217 Wauhesa Street, Madioon, Wis.	□ Filer	40-120 lbs.	S. P. M. 500 to 5000 B. P. M.	\$25.00	
Send Kipp Airat	Chipper Grinders	40-120 lbs.	6,000 R. P. M.	25.00	
<ol> <li>net 30 days, postpaid. If it is not sat- isfactory, we will return</li> </ol>	AGL AG	30-50 lbs. 50-100 lbs.	40,000 40,000	25.00 25.00	

invoice and tool on or before the 10th day after date of invoice. (Note: if you prefer to use your regular order form, please attach this coupon to it, and copy the above return arrangement on your order for a complete record.)

Ship to	State
Address	Signed
City	Tule

## for Cutting Production Costs



#### Use STACKBINS

-they are designed not simply to store material but also to save space, time and effort in assembly work.

STACKBINS are adapted to handling by skid-truck, roller, belt or overhead conveyor systems. They can be stacked one-on-top-of-the-other and vet each individual bin is accessible and the contents always visible.



Protect Your **Net Profits** with

STACKBINS

It's Modern Cost-reducing Equipment.

#### Stackbin Corporation

Pearl & Rice Streets.

Title

Providence, R. I.

Stackbin Corporation Pearl & Rice Streets Providence, R. I.

Kindly send descriptive circular and quote prices on Stackhin equipment.

Name

Address

## SALE of new Steel Benches

#### With Drawers

Made of Heavy Gage finished steel—Weight 80 lbs. Top 27"x27".

Height 33". Drawer 14x20x5" high.

Lacquered Olive Green.



While they last

\$7.50 ea.

(without vise)

Formerly sold for \$20.00 ea.

F. O. B. Providence, R. I.

STACKBIN CORP., PROVIDENCE. RHODE ISLAND

STACKBIN CORP., Rice and Pearl Sts., Providence, R. I.
Please shipBenches as advertised to:
***************************************
Address
Signed

## Noc-out

#### Automatic Roll Feeds For Punch Presses Speed Production

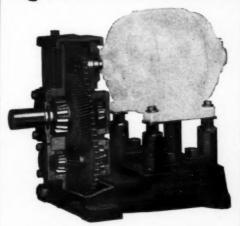
Secure automatic feeding with its many advantages for your punch presses by installing the NOC-OUT Automatic Reversible Feed. This small unit automatically feeds metal, paper, brake lining or any other stock from coils in lengths from 0 to 30 inches per stroke of press.

#### FASTER - ACCURATE - ECONOMICAL

Labor is saved, production is increased and your men safeguarded with this feed. Automatic feeding means full speed production all day long —there are no "let downs" as it eliminates the human element whose energies are limited. Can be readily installed on any press.



## The Cullman Speed Reducers



Made in sizes for motors from 1/8 to 15 H. P. Ratio 2.5 to 1 to 1014 to 1. Timken Roller Bearings and Helical Gears all moving parts operate in a bath of oil.

Cullman Wheel Company
1359 Altgeld St., Chicago, Iii.

Sprockets—Lathe, Shaper and Milling Machine Drives



The NEW
REYNOLDS No. 2
Automatic
Screw Driving
Machine
with
MAGAZINE
FEED

#### **Designed for Uninterrupted Service**

WITHOUT change or adjustment, the No. 2 magazines and drives any three consecutive sizes of wood or machine screws from Nos. 6 to 14 inclusive. It has many improvements and refinements, chief of which is the Chuck with Equalizing Jaws. Drives screws to center of a 18<sup>8</sup> circle in work not over 18<sup>8</sup> high, and gap column can be furnished to drive screws to center of 48<sup>8</sup> circle in work not over 6<sup>8</sup> high. Quickly interchangeable sets of parts can be furnished to increase range of screws driven—no change necessary for different length screws.

Write for complete information gising length and gauge of screws used, and we'll show how the Reynolds will save you money.

The Reynolds Machine Company
Dept. H. H. Massillon, Ohio

"THE MODERN WAY TO DRIVE SCREWS"



### **ELCO SCREWS**

will improve the Quality of Your Product



# Specializing in Serving the Manufacturing Consumer

We have learned HOW to REALLY SERVE.

Standard sizes are shipped from stock in any desired quantity. May we receive your inquiries?



# SCREWS

MACHINE SCREWS
MACHINE SCREW NUTS
WOOD SCREWS
LAG SCREWS
CAP SCREWS
PIPE PLUGS







# ELCO TOOL & SCREW CORPORATION

1808 Broadway, ROCKFORD, ILLINOIS



"It Pays to Use Good Screws"



# CREAM

Those who need your tools, and have the money to buy them, are the "cream" of any advertising circulation from your own practical sales standpoint.

Many of them don't know that you make what they need, and you lose their business. The only kind of circulation that will enable you to tell what you make to practically all of the "cream" is controlled circulation. That is so self-evident that it hardly seems necessary to state it.

It is just as easy to mail the BLUE BOOK to the "cream" of the trade as it is to the skimmed milk fellows. Therefore, we do just what you would do—we give a complete and effective circulation to the best that can be found.

There is more business waiting for you if you tell your story to more people of the "cream" class who are ready to listen. The BLUE BOOK will do this for you, if you will let it, in a manner that is as practical and effective as it is economical.

Oh, yes; you can get along without it, in the same way that the other fellow can get along without the tools which he doesn't know you make. But is it good business?

Rates upon application to Hitchcock Publishing Co. 508 So. Dearborn St., Chicago

### Scratch Awl & Drift Pin No. 16. Roller Bearing

Drop Forged - Alloy Steel-Hardened

No. 5. Jr. Punch



Capacity 1/4" thru 16 gage Weight 21/2 lbs.

No. O. Solid Set



Made from High Grade Tool Steel
No. 50 Angle Iron Mitre Notcher

Punch



Capacity 16" thru 14"

Hollow Punch Set



Self Centering Locating Spring Point. Made in 3 sizes.

No. 6 Slitting Shear



and No. 51 Angle Iron Bender

Capacity will shear Mitre in 2\*x2\*x¼\* Angle Iron.

Weight of Mitre Notcher 55 lbs. Weight of Mitre Notcher Bender 43 lbs

Roller Bearing
Cap. %s\* Thicknes, Throatless\*
Drop Forged

Write for Catalog on Entire Line

WHITNEY METAL TOOL CO.

95 Forbes St., Rockford, Ill..

# **AMES Bench Lathes**

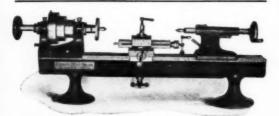


For Turning—Drilling—Grinding—Milling— Threading—Filing—Polishing—in the tool room or in production.

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Detroit Branch: 902 Stephenson Bldg.



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The economy of these lathes is in the small investment, to perform work, within their size, to better advantage than on larger and more expensive machines. In fact, for some classes of work there is no substitute for the fine accuracy and convenient operation obtained on Wade Bench Lathes.

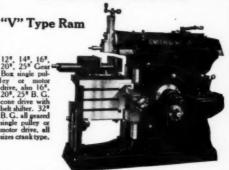
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THE WADE TOOL CO., Waltham, Mass.

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12", 14", 16", 20", 25" Gear Box single pulley or motor drive, also 16°, 20°, 25° B. G. cone drive with belt shifter. 32" B. G. all geared single pulley or

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# Improved Thompson Grinder

Self-contained and motor driven. this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

All standard mach nes equipped with auxiliary independent coarse cross feed for surface grinding.

Capacity 12"x36"

The Thompson Grinder Co.

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# Townsend Centrifugal Multi-Blow Riveters

THE ONLY MACHINE THAT IMITATES HAND RIVETING IN EVERY WAY.

NUMEROUS TYPES FOR ALL KINDS OF WORK.

Round and Flat heads, hollow and cheek rivets from .008" to ½16" without distortion or breaking of fragile material. In places inaccessible by any other method.

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Established 1883

Illustration shows

No. 5 Press 12 tons pressure



Write for our Catalog showing 64 different styles.

Greenerd Arbor Presses Nashua, N. H.





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Send Blue Prints for Estimates-No Obligation

American Hollow Boring Co., 1035 West 19th St.,

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Illustrated is our No. 55 Power Press designed especially for production work where speed is essential. At 10 tons pressure No. 55 has a ram travel of 27 feet per minute.

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#### For Metal Cutting Operations



The "Jarvis" Bench Band Saw cuts metals—straight, curved or bevel. It is motor driven, operates from a lamp socket and is vibrationless. Ball bearing disc wheels, worm drive.

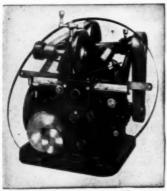
12" size cuts up to 1½" cold rolled steel. 16" size cuts up to 2" cold steel. Also made for cutting soft metals, Bakelite fibre, transite, wood, etc.

Details gladly sent upon request.

#### BENJ. E. JARVIS, Inc. NEWARK, NEW JERSEY

Walls Sales Corp., Agents 96 Warren St., New York City

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These machines have self adjusting ball bearings in wheel spindle and self adjusting bronze bearings in work spindle —they need no attention during their life.

This machine will sharpen metal slitting circular saws, power hack saw blades and metal and wood cutting band saws.

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METAL SAWING MACHINES

Fast, accurate production Metal Sawing Machines for machine steels, tool steels, stainless steels and high speed steels as well as all other classes of cut-off work. Made in three sizes -6"x6", 9" x 9", 13" x 13". Three Speeds, Belt or motor drive, Arrangements for motor, standard equipment.

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One rivet per second.
Heads highly polished.
No hammer or tool marks.
The work is always uniform.
As tight or loose as desired.
Works in hard-to-get-at places.
It's easily operated by cheap help.
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And—it's noiseless in operation.

Write today for Catalog, showing several styles. Also send us samples of your work for riveting; we will return them with close estimate of cost.

The Grant Mfg. & Machine Co. C. E. Station, Bridgeport, Conn.

No. I cuts from 1/16 to 1 inch

For Quantity Production or Mixed Runs

### The DAVIS Keyseater

Cuts perfect keyways in pulleys, bell cranks, gear blanks, crank handles, etc., and does slotting and oil grooving. Can be profitably used on quantity production of standard parts, yet is so versatile and easy to set-up that it is indispensable for the mixed runs of every day job work. Made in two sizes.

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Complete with Push Trolley and Collectors

1-Ton Capacity - Price \$300.00 2-Ton Capacity - Price \$450.00

We are also Manufacturers of Overhead Traveling Cranes from 1-ton to 10-tons.

Send for Detailed Specifications

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# -for good tapping

Here's the machine to make your light tapping work really profitable. It is fast, accurate and economical, both in original and operating cost. Entirely automatic, except for insertion and removal of work, and dependable as the seasons; never breaks a tap or strips a thread. Use it too for rempine hurring counters in the contraction of the contraction o



reaming, burring, countersinking; it's a money maker on each.

CIRCULARS ON REQUEST.

THE BURKE MACHINE TOOL CO.

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#### for the warm spots

Overcome this "loss of pep" in your plant—do away with this hot weather fatigue by installing BREEZO Ventilating Fans. With air in constant circulation you will find a decided improvement in working conditions. They are inexpensive, easy to install, efficient, and very quiet. They provide effective ventilation at low cost. Seven sizes, from 8\* to 36° diameter.

Write us today for descriptive literature and installation data on these fans.

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Big Machines
to Grind Your
BROACHES—
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The COLONIAL was specifically designed to sharpen broaches and it does the work more accurately and at lower costs. Takes only one-third as much time and production records show savings in cost of two-thirds! Quickly returns its low purchase price and turns out much better work.

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All Materials— 1/a' to 36'

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All Parts Interchangeable!

Made with 1 to 4 spindles. Self-aligning ball bearings.

Extremely sensitive, accurate and durable, they are quality drills for those who buy tools for what they do.

The picture shows our No. 0 2-spindle ball bearing Bench Drill--a splendid tool.

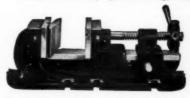


Booklets on both Plain and Ball Bearing Drills

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With Automatic, Quick-Acting, Powerful Grip



Holds Irregular Pieces Firmly

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it the most efficient vise on the market. Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

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All types and materials including

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WORKS CHICAGO, ILL.

WINDS STANDARDIZATION PAYS



TYPE "TF" (TIMKEN BEARING EQUIPPED)

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**BOSTON GEARS** 

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That was the interesting—and profitable—experience of one of the users of the

#### " CANTON" Portable Crane, Hoist and Truck

"The Portable Floor Crane has proven the best investment we ever made. We believe we saved its cost the first month we used it. Our big saving has been in the handling of our heavy die blocks in our machine shop as one of our helpers can now with ease do the work of 6 to 8 men."

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#### Abolish Expensive Hand Finishing

with a



#### Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. Details of this and other styles and sizes on request.

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Write for Circular

PEERLESS SURFACING MACHINE CO., Inc. TROY, N. Y.

# Analysis of Circulation of HITCHCOCK'S MACHINE TOOL BLUE BOOK By Dun and Bradstreet Ratings

(Corrected to September 1st, 1930)

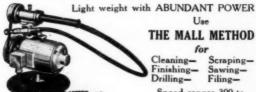
To domestic concerns, and superintendents, works managers, production engineers, etc., in such concerns rated at-Exceeding \$1,000,000 1.937 \$500,000 to \$1,000,000 1.486 \$300.000 to \$ 500,000..... 1.402 \$200,000 to \$ 300,000 1,306 \$125,000 to \$ 200,000\_\_\_\_\_ 1.892 \$ 75,000 to \$ 125,000 1.827 \$ 50,000 to \$ 75,000 1.558 50,000 \$ 20,000 to \$ 3,190 \$ 10,000 to \$ 20,000 2,132 5.000 to \$ 10.000 1.604 TOTAL to Private Concerns of over \$5,000 ... 18,334 Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Selected Foreign Importers and Users, Etc.,... 2.990 TOTAL to Buyers of Known Responsibility \_\_ 21,324 \*Concerns quoted in Dun or Bradstreet, but without Capital Rating 2.232 Concerns not vet in either Dun or Bradstreet. which includes new industries 1.424 Concerns rated \$3,000 to \$5,000..... 489 Miscellaneous 217

TOTAL CIRCULATION 25,686

<sup>\*</sup>This group includes a considerable number of large concerns, and some small ones of high credit, whose capital rating is not given by either of the commercial agencies.

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#### HEAVY DUTY-HIGH SPEED Die Sinking Machines



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for

Cleaning- Scraping-Finishing- Sawing-Drilling- Filing-

Speed ranges 300 to 21.000 r. p. m.

Detailed Catalog on Request

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1/3 H.P.—Three Speeds Other Types In

Vertical-Direct Drive

And

Three Speed Horizontal Types 1/8 to 2 H. P.

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**Drop Forged Lathe Dogs** 





Forged from selected open hearth steel which gives both toughness and stiffness. Hub oversize, permits retapping Alloy steel screws. 12 types—Square head, Head-

tapping Alloy steel screws. 12 types—Square head, Head-less, and Safety Screws. Straight and bent tails. Catalog B-27 sent

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The Siewek Tool Company announce the addition of two new products, a Box Drill Jig and a Leaf Drill Jig. These are carried in stock ready for shipment in nine different sizes in the Box Jigs and six different sizes in the Leaf Jigs.

Cuts show the Box Jig and Leaf Jig.

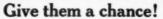
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Siewek Tool Company,

Mfgrs. Siewek Rapid Clamping Drill Jigs, Box Jigs, Leaf Jigs. Fixture Locks and Drill Heads.

10232 Woodward Ave., Detroit, Mich.

SIEWEK LEAF JIG



Your machines can turn out good machine tools—but they cannot perform at their best with a poor coolant supply. It takes a continuous flow of coolant—the kind Gusher supplies—to get speed and consistency.

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THE RUTHMAN MACHINERY CO.

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#### Blower, Sprayer, Suction-cleaner Instantly Convertible ~ No Installation

This portable electric blower delivers DRY air, free from oil, at high velocity, yet low pressure. It safety, quickly, and efficiently cleans motors, generators, converters, shafting, overhead piping, etc. Reduces fire risk and danger of "shorts" and "burnouts."

Instantly convertible for suction-cleaning stocks, bins, auto interiors, furniture, overhead pipes, shafts, line shafting, etc. or for spraying insecticides, deodorants, paints, lacquers, etc.

Attach to any light socket. Less than 2 an hour to run. Ball bearings—no oiling. 4 models. Used by over 20,000 concerns. Fully guaranteed by 20 year old company, originators and largest manufacturers of portable electric blowers.

Try this blower 10 days. Then pay for it or return it at our expense.

WRITE NOW For prices and descriptive folder No. 62C; also our 10 day absolutely FREE trial offer we are now making for a limited time.

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> Cements Cadillac

#### Balancing to a "T"

The Anderson Ever-Ready



Whether it's a crank shaft or a turbine rotar you are testing the Anderson is equally sensitive. With its 6 sizes it will balance anything that revolves, up to 24,000 lbs.

It requires no leveling or adjustment, no centers; its hardened spindles are not dented by use.

"Swing"	20*	40*	60°	72*	96*	72*
Greatest distance bet, standards. Capacity in lbs.	20° 1000	30° 2000	30° 2000	66° 5000	88° 10000	201 24000
Approx. shipping weight	Rend Rend	90 Rid	150 Bis	350	650 Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
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### The Accuracy and Wide Range



of the Springfield Straightening Press make it Invaluable

This press is made in three sizes to meet practically every straightening need that arises in shop, factory, tool room or garage. It lends itself with equal case and effectiveness to the testing of came and crank shatts—the straightening of any length rough or finished work—or the truing of sprung tools. As it is compact it may be placed on work bench—an economy feature of space and time saving, second only to its wide range efficiency.

Send for circular showing its many uses

The Springfield Machine Tool Company
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We also manufacture Engine Lathes and Shapers

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Quite a number of you, particularly among automobile manufacturers, have sent us lists of the prominent men in your organizations who are most closely identified with the planning of your improvements and the selection or purchase of your machinery.

If you have not done this, you are earnestly requested to send us such a list of names, so that we may mail the Blue Book regularly every month to those of your own selection, without cost or obligation of any kind whatsoever. Simply tear out this page, write the names on the reverse side, and mail it to the publisher.

Our only object is to make the Blue Book the best buying and selling medium on earth between manufacturers of machine tools and shop equipment and plants such as yours.

(See next page)

#### HITCHCOCK PUBLISHING CO. 508 S. Dearborn St., Chicago, Ill.

Please send your Machine Tool Blue Book, without cost, to the following members of our organization, who have to do with planning the equipment of our machine shops and the selection or purchase of our machine tools and other shop requirements:

(Give both names a	and titles)
	(E)   1.   1.   1.   1.   1.   1.   1.   1
	***************************************
It is understood that you are to use list for your Machine Tool Blue Book or used for any other purpose.	the above names as a mailing nly, and that they will not be
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Street No.	
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Standard hardened and ground to within .0002" over listed sizes. Also carried oversize .001" for use in repair work, etc. Ask for Bulletin No. 551.

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with a Walton Tap Extractor

Remove that broken tap quickly - without injury to the threads.

About 90% of all taps break before they wear out. Each broken tap means stopped production, and the loss of a mechanic's valuable time. Decrease time spent on extracting broken taps and increase production. You can do it with a Walton Tap Extractor.

Made in three and four-flute styles.

A 60 day free trial will convince you

The Walton Company
302 Pearl St., Hartford, Conn.

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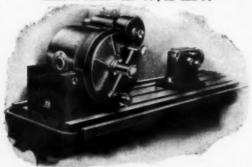
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PLAIN TYPE-Made in Two Sizes-101 and 111



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Made in Three Sizes-10", 12" and 14"



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AFETY





Builders of

# The Eincinnate

Ball Bearing Electric Drills, Screw Drivers, Nut Setters, Tappers, Valve Grinders, Aerial Grinders, Tool Post Grinders, Floor Buffers, Bench and Floor Grinders.

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# High Spe

THE CINCINNAT alloys, non-ferrous as well as fibrous r and shapes up to 2 up to 45°, using the

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THE CINCINNAT wheels, operating The cutting wheel sive dust are carried haust connection.

Write for Bulletin Table of

The Cincinna

DIVISION OF T

# le Cincinnati

# Speed Cut-off Machine

CINNATI is the machine you need for cutting steel-ferrous materials such as brass, copper, aluminum, fibrous materials of all kinds, in various sizes, angles up to 2¼ inclusive. Makes cuts, straight or angle, using the same vise for the various cuts.

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CINNATI uses 12 or 14-inch diameter abrasive erating at a peripheral speed of 16,000 S. F. M. wheel is completely guarded and sparks and abrase carried away from the operator through an exection.

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Cincinnati, Ohio, U.S.A.

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AND
ECONOMICAL
HOIST BUILT



ALL STEEL SUSPENSION 92 % MECHANICAL EFFICIENCY

2000 lb. CAPACITY

# BOX TYPE HEAD CRANE

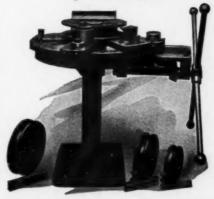
ROOM
LIFTS ITS LOAD WITHIN IBIN. OF CEILING

HEAVY DUTY ELECTRIC AND HAND TRAVELING CRANES MADE IN EVERY SIZE AND TYPE FOR EVERY DUTY

BOX CRANE & HOIST CORPORATION

2234 EAST ONTARIO ST., PHILADELPHIA, PA. REPRESENTATIVES IN PRINCIPAL CITIES.

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Universal satisfaction for the past 20 years has been the keynote of our success with bending pipe.

Recently we have made two radical departures, viz., the horizontal table and the improved bending principle, which offers decided advantages in Time-saving, Convenience and Superior Work.

Iron, steel, galvanized and copper pipe are bent cold and unloaded on the radii of the rolls. For 2<sup>st</sup> and under.

We have a Bulletin awaiting for you.

SEND FOR 1T NOW.

### Pedrick Tool & Machine Co.

Manufacturers of Cylinder Boring Bars, Portable Millers, Crank Pin Turning Machines, etc.

#### "Carefree Service at Any Speed"

by using



# **EDGEMONT** TYPE SF DISC CLUTCH

"Type SF" Mechanisms are furnished separate or in pulleys, sprocket and sheave blanks, extended sleeves and cut-off couplings. Made with ball bearing, roller bearing, bronze bushed and oil sleeve bearing.

Send new for literature and blue prints

#### The Edgemont Machine Co.

2900 Home Avenue,

High Speed

Tapper

Dayton, Ohio

# "PRO-CUN-IER" TAPPING DEVICES

For only a few dollars, a "PROCUNIER" reversible tapping head converts your drill press into a sensitive tapping machine. Our brand new cork clutch reversible tapper (illustrated), taps perfect holes at 1 to 2000 R. P. M. or better.

#### Capacity 0 to 1/2": Price only \$45.00

"Pro" tappers frequently tap 1/4 to 1/2 million holes before even the clutch is replaced.

> Here's all the "Pro" steel dog clutch tappers cost complete with our new style tap holder:

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# UTILITY - WIARD Quick Change

CHUCKS

(Improved)

For The

Rapid Changing of Tools While The Spindle Is Turning

Quick Accurate Powerful Dependable

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Have Proved Time and Labor Savers



D. & W. Magnetic Chucks hold a great variety of iron and steel pieces for grinding, milling, planing and shaping operations. By the effective way they serve you, they soon pay for themselves. We specialize in problems dealing with the use of flat and rotary magnetic chucks. Let us investigate any question which is confronting you.

Special chucks to order. Folder and price list an request.

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COVERAGE DIRECTNESS HANDINESS EFFICIENCY and ECONOMY



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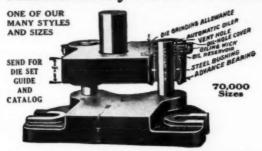
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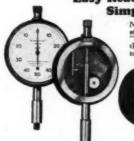
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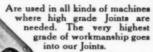
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Pipe Cutters Ridge Tool Co., Elyria, Ohio

Pipe Plugs, Square Head and Slotted Elco Tool & Screw Corp., Rackford, Ili.

Pipe Vises Ridge Tool Co., Elyria, Ohio

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Planers, Valve Seat, Portable Sedrick Tool & Machine Co., Philadelphia

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Presses, Air Hannifin Mfg. Co., 621 S. Kolmar Av., Chgo.

Presses, Arber Atlas Press Co., Kalamasoo, Mich. Greenerd Arbor Presses, Nashua, N. H. Wilson, R. K., Buffalo, N. Y.

Presses, Broacking Greenerd Arbor Presses, Nashua, N. H.

Presses, Foot Taylor & Fenn Co., Hartford, Conn.

Presses, Power Headley & Whittemers-Co., Beloit, Wis.

Presses, Punch Lewthwalto Meho. Co., T. H., 811H, 47th., N. Y.

Pulley Machinery Aver Drilling Machine Co., Cincinnati

Profiling Machines Wade Tool Co., Waltham, Mass.

Pulleys, Iron, Solid and Split

Pumps, Coolant Roper Corporation, Geo. D., Bookford, III.

Pumps, Lubricant Ruthman Machinery Co., Cinemati, O.

Punch Press Feeds Wittek Mfg. Co., 4309 W. 24th Place, Chgo.

Punch, Shear and Bender, Hand Armstrong-fluon Mfg. Co., 841 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mig. Co., 841 N. Francisco
Hullais Forgo Co., Buffalo, N. Av., Chivage
Handiay & Whittenmer Co., Besitt, Wis.
Lawthwalts Mebe. Co., T. H., 311 E. 47th,
New York
Whitney Metal Tool Co., Beckford, III.

Punches, Pewer Hendley & Whittemers Co., Beleit, Wis.

Punches and Dies Hendley & Whittemers Co., Beielt, Wis. Lewthwaite Mche.Co., T.H., 211 B. 47th., N. Y.

Punches and Shears Excelsior Tool & Meb. Co., E. St. Louis, Ill.

Pyrometers Illinois Testing Laboratories, Inc., 160 W. Austin Ave., Chicago

Reamers, Adjustable Cleveland Twist Drill Co., Cleveland, Ohio. Schellenbach Hunt Tool Co., Cleveland, O.

Reamers, Portable Electric Standard Electrical Tool Co., Cincinnati, O. U. S. Electrical Tool Co., Cincinnati, Ohlo

Riveters, Multiple Spindle Grant Mfg. & Mche. Co., Bridgeport, Cean.

Riveters, Pneumatic Grant Mfg. & Mche. Co., Bridgeport, Conn.

Riveting Machines Buffalo Forgs Co., Buffalo, N. Y. Grant Mfg. & Mcho. Co., Bridgeport, Conn. Townsend Mfg. Co., H. P., Hartford, Conn.

Presses, Screw
Jaracki Mohe. & T. Co., Grand Rapids, Mich.

Pulley Machinery

Pulley Machinery

Red Cutters
Armstrong. Burn Mfg. Co., 941 N. Francisco
Av., Chiesgo
Hendley & Whittemere Co., Riolit, Wis.
Lawthwales Methe. Co., T. B., 311 S. 471a, N. Y.

Rotary Tables, Hand Feed Stavens Inc., John B., 396 Hudson Street, New York

Saw Sharpening Machines Porter Mchy. Co., J. E., Muskeyon, Mich Schert Co., Geo., 142 Liberty St., New York Wardwell Mfg. Co., Gleveland, O.

Saws, Electric Hand U. S. Electrical Tool Co., Cineinnati, O.

Scraping Machines, Hand & Pneumatic Anderson Brothers Mfg. Co., Reckford, D.

Screw Drivers, Electric Standard Electrical Tool Co., Cincinnati, O. U. S. Siectrical Tool Co., Cincinnati, Oblo Vim Electric Tool Co., 149 Broadway, N. Y.

Screw Driving Machines, Automatic Barnelds Machine Co., Massillon, Ohio

Screw Machine Products National Asme Co., Cleveland, Obio.

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Screws, Cap, Drive, Lag, Mch. & Wood Eleo Tool & Screw Corp., Rockford, Ill.

Set-Up Appliances Houser Mfg. Co., 1688 N. Paulina St., Chys. Standard Shop Equip. Co., Philadelphia, Ps.

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Keller Mech. Eng. Corp., 86 A Washington St.

Brooklyn, N. Y.

Mall Tool Co., 7780 S. Chicage Ave., Chgo.

Strand Co., N. A., 5601 N. Lincoln St., Chgo.

U. S. Electrical Tool Co., Cizelmast, Chio

Shalts, Steel American Hollow Bering Co., Mrls, Pa.

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Shears, Alligator Canton Foundry & Machine Co., Canton, O.

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Shears, Power Buffalo Forge Co., Buffalo, N. Y. Handley & Whittemers Co., Beleit, Wis.

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Bostos Gwar Works Sabes Con Norfolk
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Cullman Whoel Co., 1888 AD 180 W Genere St.
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Sprockets
Chicago Gear Works, 780-773 W. Jackson
Blvd., Chicago
Culiman Wheel Co., 1869 Altgeld St., Chgo.
Massachusetts Gear & T. Co., Wobern, Mass

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Stencils, Brass and Oil Board Schwordtie Stamp Co., Bridgeport, Cons.

Straightening Machines Springfield Machine Tool Co., Springfield, O. Whitney Meta | Too. Co., Rockford, Ill.

Stud Setters Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Tap Extractors Walton Co., Hartford, Conn.

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Tapper, Hand Bay State Tool & Mch. Co., Springfield, Mass.

Tapping Machines and Attachments
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Burke Machine Tool Co., Conneaut, Osle
Burke Machine Tool Co., Conneaut, Osle
Leiand Gifford Co., Worcester, Mass.
Precunier Safety Check Co., 14 8. Chaten
Whitney Metal Tool Co., Bockford, IR.

Taps, Collapsing National Acme Co., Cleveland, Obio

Threading Machines, Automatic, Stud Grant Mfg. & Mobe. Co., Bridgeport, Coun.

Threading Tools Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tool Holders
Armstrong Bres. Tool Co., 808 N. Francisco
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Western Tool & Mfg. Co., Springfield, O.
Wilder Tool Co., Greenfield, Mass.

Armstrong Bres. Tool Co., 200 H. Francisco Av., Chicago

Tools, Lathe and Planer Armstrong Bros. Teel Co., 898 N. Francisco

Tools, Machinists' Armstrong Bres. Tool Co., 308 N. Francisco

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Brandtin & Co., Geo. M. M., 1907, R. V.,
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Brown Machinery Co., Providence, B. I.
Brown Machinery Co., Providence, B. I.
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Crawford & Co., Inc., F. H., 60 Cheese, B. I.
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Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
Crawford & Co., Inc., F. H., 60 Cheese, B. I.
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Hill, Clarke & Co., 649 with Washington
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Midwest Machine Tool & Supreheave, 101
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Modern Machinery Co., 120 Centre St.,
Morey and Co., inc., son Breome St., N. Y.
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Vises, Milling Statume Hartford Special Sichy, Co., Hartford, Cesn. Heuser Sir G. O., 1638 N. Pasilins St., Chge. Plunket Mche. Co., J. E., 215 N. Ada, Chgo. Stevens Inc., John B., 306 Hudson Street, New York Vises, Milling Machine

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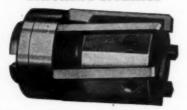
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Punch and shear, 24" Southwark
arch jaw, cap. 1½"x1", motor drive.
Saw, 39" Espen-Lucas, cap. 3".
Staper, 24" Gould & Eberhardt,
belt drive. "x

Shear, angle, Type C Long & A.

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Chuck, Hadd magnetic 144x40' Bulldoser, No. 2 w. w., iffic. ciutch. Chuck, Heald magnetic 149x40". Chuck, Walker magnetic, 6" diam. Cold header, 4" W.-F., solid die. Cold saws, Nos. 119 and 12 Higley. Crimping roll, 6" Robinson, 16 ga. Drill, 24" Rockford, g. f. taper att. Drill, radial, 5" Western, g. L., m. d. Drill, sensitive radial, 3" Amer. t. a.

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motor leg. Lathe, 18"x8' L. & S. sel. hd. m.d.t.a, Lathe, 29"x10' Hendey, belted m. d.

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Motor, 10 h. p. a. c., 3/66/220/1740.
Motor, 20 h. p. a. c., 3/66/220/1740.
Motor, 20 h. p. a. c., 3/66/220/1740.
Motor, 25 h. p. aipr. g., 3/69/220/1140.
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Press, No. 14 Toledo horn.
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Presse, F-162 Ferracute, foot power.
Presse, To. 3 Bliss, nuch type.

Press, N. 0.3 Bliss, punch type, Presses, No. 3 Bliss, punch type, Presses, o.b.i., No. 1 Toledo, Press, Nos. 19, 21, 22 Bliss o. b. i. Pr., o.b.i. No. 1 VKV; No. 1 Sidney, Press, o.b.i. No. 3 Niagara, 14 Press, o.b.i. No. 3 Niagara, 14 Press, C-3 Ferracute, o. b. i., plain.

Press, C-3 Ferracute, o. b. i., plain. Presses, foot, No. 57 Bliss, pendulum. Press. No. 6 Perkins, s. s., 4000 lbs. Presses, No. 6 Pierkins, s. s., 4000 lbs. Presses, No. 6 Pierkins, acrew. Press, s. s. 66" bet. hgs, 7400 lbs; roller feed motor drive. Punch, s. e., Badger, 7" thrt., "x"g". Punch, s. e., Badger, 8" thrt., "x"g". Punch, s. e., Badger, 8" thrt., "x"g". Punch, s. e., Buffalo 30" thrt., 48" cap. Durch N. 6.

Punch, No. 13 Niagara hand power, 10" tht; wt. 140 lbs. Punch, Rapid, 20" tht., 1"x\frac{1}{2}", m. d. Punch & stake riveter, No. 123-C. Toledo boilermakers. Riveter, Grant No. 101, 5/16" cap.,

for motor drive. Riveters, 1-AA, 3-A, 54-B, hi. speed. Screw machine. No. 6G B. & S.

Riveters, I-A., 3-A, 59-13, In. speca. Screw machine. No. 6 B. & S. automatic, belted motor drive, Shaper, 7' Rhodes, vert, ram. m. d. Shaper, 18' Hendey friction, vice, c/as. Shaper, 20' & 16' Cin., b. g., crank. Shaper, 20' & 16' Lennox, throuless, Shear, plate, 86' Tk. Lennox, throuless, Shear, plate, 86' Tk. Lennox, throuless, Shear, rotary, 12' thrt., cap. 10 ga. Shear, rotary, 36' throat cap. 7/32' Shear, rotary, 18' ga., Yoder, 24' thr. Shear, 10' Alf ga. Ohlows, 20' x18' ga., power. Shear, aguaring, 8' x18' ga., power. Shear, aguaring, 30' x18' ga., pr. Thread. mch., 4' Geometrie, a.s.fl.st. Turret, No. 4 W. & S., g. f. h. w. f.

#### FOR SALE BY

#### M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Beam bender, Cleveland, m. d., capacity 15" I-beams.
Brake, Robinson 8" 16 gauge, new condition.
Drill, Detroit 8-apindle horizontal semi-automatic (2).
Gang alitter, 36" Yoder, lot of cutters and spacing collars.
Grinder, No. 4 Brown & Sharpe universal, countershaft drive.
Header, Manville No. 2 s. d. d. s., excellent condition, (2).
Lathe, 16"x3' Hendey tool room, serial above 19900.
Lathe, 16"x3' Cincinnati q. c. g. excellent condition, cheap.
Motor, 42 H. P. 229 volt 3; phase 80 ycle for Ryerson No. 3 friction saw.
Shaper, Smith & Mills 21", cone type, bargain price.
Shear, double angle 6"x6"x1" m. d.
Tapper, 4" Rickert-Shafer horizontal column type.
Turret lathe, No. 2 Bardons & Oliver, b. g. and power feed.

#### FOR SALE BY

#### Davis Machinery Exchange, 1-3-5 So. St. Clair St., Toledo, Ohio

Bolt threader, §" Landis dbl. head. Bolt threaders, I§" and 2" National. Boring mill, 3" Bullard vertical, new era head.
Drill, 30" Barnes, 4-spindle.
Drill, No. 310 Baker hyy. duty, (3).
Drill, 39 Carlton radial, g. b., s. p.d.
Drill, 39 Carlton radial, g. b., s. p.d.
Drill, 3-gardial, tapping attachment, universal table.
Drill, 1-spindle Allen, h. a. b. b.
Drill, 1-spindle, L. & G. h. s. b. s. b.
Drill, 1-spindle, 1-spindle, L

Grinder, No. 4 Gardner disc, 19 a. p. motor drive.
Grinder, No. 14 Brown & S., plain,
Grinder, No. 14 Brown & S., plain,
Grinder, 10"20" Landis pl. self-con.
Grinder, No. 20 Askiey univ., comp.
Gronver, 13" Toledo pow.
Hack saws, 616 Racine & Peerless.
Hammer, "S-Chuster riveting.
Keyseater, No. 9 Mitts & Merrill.
Keyseater, No. 9 Baker,
Keyseater, No. 9 Baker,
Lathe, 18"48" Sidney q. c. g. Hadey
q. c. g., tager and collet attachment.
Lathe, 16"48" South Bend, sid. c. g.
Lathe, 16"48" South Gand, sid. c. g.
Lathe, 16"48" South Gand, sid. c. g.
Lathe, 16"58" South Bend, sid. c. g.
Lathe, 16"58" South Bend, sid. c. g.
Lathe, 16"58" All Charles, d. g. C. g., chuck.
Lathe, 16"58" American q. c. g., c. g., c. d.
Lathe, 18"58" American q. c. g.

Lathe, 18"x10" American q. c. g., taper and relieving attachments. Mill, No.1 Kempsmith universal. Mill, No.2 LeBlond univ. index & vertical head. complete.
Mill, No. 1# Becker-Brainard universal, complete. Mill, No. 3 LeBlond, univ., comp. Mill, No. 3 LeBlond, univ., comp. Mills, No. 14, No. 2 and No. 3 Cincinnati plain, all geared feeds, Mill, No. 2 Kempsmith plain. Mill, No. 6 Steptoe, p. f. Mill, A. 1, Becker vertical. Mill, Model C. Becker vertical. Mill, Model C. Becker vertical. a. p. d. Mill, No. 8 Whiteley hand, (6). Mill, No. 8 Whiteley hand, (6). Mill, No. 12 Le & S. production, (2). Miller, No. 1 Toledo b. b. hand (2). Miller, No. 1 Toledo b. b. hand (2). Miller, No. 1 Toledo b. b. hand (2). Knight. Nilght, Milght, Milght, Milght, Mibler, metal No. 1 Campbell, Oil groover, Fisher No. 1. Press, arbor, No. 3 A Atlas. Press, No. 4 Toledo o.h.i., flywheel. Press, No. 3 Bliss, s. b., flywheel. Press, No. 4 Buser. Can type P. Press, No. 8 Bliss, bench type (3). Press, No. 81 Consolidated, bench. ress, 40 ton Manhattan screw Press, 49 ton Manhattan screw Screw machine, No. 6 Warner & S. Screw machine, No. 7 Foater, Screw machine, No. 4 Foater, Screw mche., 4 Cleveland Model A. Screw mche., 14 Cleveland Model A. Shaper, 16 Whipp crank, s. g. Shaper, 16 20 Stepporen & S. Shaper, 18 20 Stepporen & S. Shaper, 19 30 Stepporen & S. Shaper, 30 Shaper, 10 Crank, s. g. Shaper, 24" Smith & M. crank, s.p.d. Shaper, 24" Walcott crank, b. g. Tappers, No. 1 & No. 2 X Garvin vertical (8).
Threader, \$" Geometric.
Welder, 50 k. w. Taylor spot, 440 v.

#### FOR SALE BY

#### West Penn Machinery Company

1208 House Building,

Automatics, 14" Fay. Automatic, No. 0 Brown & S. b. d. Automatic, No. 85 National Acme. Automatic, No. 35 National Acme. Air compressors, 30 to 1500 cc. ft. Bender, No. 6-C Wallace, m. d. Blowers, Nos. 3 & 4 North Amer. Bolt cutter, 14" Landis, dbl. head. Bolt cutter, 1" Landis, 5 hds., m. d. Boring mill, 10"-16" Betts, 2 hds. m. d. Borning mill, 10"-16" Betts, 2 hds. m. d. Bor, mill, hor., No. 1 Cleve. 21"bar. Boring mill, floor type, 51" D. & H. Bor, mill, hor, No. 1 Cleve, 24" bar. Boring mill, Boor type, 54" D. & H. Brake, 5' press type, 10 gauge. Brake, 6' hand, 16 gauge. Brake, 6' hand, 16 gauge. Brake, 8' D. & K. 10 ga. box & pan. Brake, 10' Dreis & K. 3',16" m. d. Bulldozers, Nos. 2, 4. 6, 28, 29 & 30. Dreing mches., 38 & 50 ton H. & W. Drill, 21" Rockford, up. att. m. d. Drill, radial, 4' Protection, and the control of the cont Hammer, Blacker, power, 35-lbs. Hammer, 80-lb. Bradley, cush. helve. Hammer, 200-lb. Bradley, compact. Hammers, Nos. 3-B 4-B, 4-N Nazel. Hammers, steam, 600 lb. to 6000 lbs. Jacks, 35 ton Barrett, bail bearing. Lathe, 16"x6" Hendey Q. c. g. Lathe, 20"x6" Hendey Q. c. g. Lathe, 20"x6" Hendey, the bar, t. a. Lathe. 24"x16" Bridgeford, grd. hd. Lathe, 46"x36" Bridgeford, grd. hd. Lathe, turret, No. 6 Warner & S. Lathe, turret, No. 8 Warner & S. Lathe, turret, 20" Steinle, 64" hole. Lathe, turret, 24" Libby, 75" hole. Lysholm tables, 72"x30". Miller, dupler, 24" Cincinnati auto, Miller, plain, No. 2-A Milwaukee. Miller, plain, No. 2-A Milwaukee. Miller, tingersoll, 48"x45"x20"adj, rail. Miller, vert. No. 5 Brown & Sharpe. Nut tapper, 6-sp. Acme semi-auto, 5". Hammers, steam, 600 lb. to 6000 lbs.

Miller, vert. No. 3 Brown & Snarpe. Nut tapper, 6-sp. Acme semi-auto, 8 Pipe mchs., 8" Oster, 8" Williams. Pipe machine. 2" Landis. Planer, 30"x30"x10' Woodward & P. Planer, 48"x48"x18' D. & H. m. d. Planer, o. s., 34"x36"x16' D. & H.

Pittsburgh, Pa.
Planer, rotary, 48" Niles, m. d.
Presses, arbor, Nos. 7, 17 Greenerd.
Press, o.b.i. Ferracute Cl., 3" stroke.
Press, hydnaulic., 1,000 ton United.
Press, bydraulic., 1,000 ton United.
Press, No., 23 "Yal9", 2" stroke.
Press, No., 78 Toledo, 14" stroke.
Press, No. 78 Toledo, 1, 1, 10" str.
Press, No. 92 B Toledo, d.c. 24" str.
Press, No. 93 P Toledo, 42" x18".
Press, No. 97 Niagara, acrew.
Press, No. 159 Toledo, acrew.
Press, wheel, 200-ton Caldwell.
Press, wheel, 200-ton Caldwell. Fress, wheel, 200-ton Caldwell. Press, wheel, 400-ton Niles. Punch, hor., Cleveland, 1" thru 1". Punch, hand, Shatz, bar and angle. Punch & sh. No. 6 L. & A. †" thru †". Punch & sh., No. 24-U Buffalo m.d. Punch, multiple, No. 5 H. & J. 10'. Funch, multiple, No. 3 H. & J. IV. Riveters, air, hammer, spinning. Rolls, angle, 4°x4°x§ W. & W. Rolls, bending, 8°x1¢ a, hand. Rolls, hand. Rolls Saw, cold, 48" Newton, m. d.
Saw, frict, Model I.A. Hunter, 24".
Saw, frict, Model I.A. Hunter, 24".
Saw, frict, Model I.A. Hunter, 24".
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, No. 5 Marvel, b. d.
Shapers, 16", 39", 24" & 36" G. & E.
Shaper, 20" Ohio crank, vise, b. d.
Shaper, 44" Potter & Johnston, b. d.
Shaper, 48" Morton, draw cut.
Shear, angle, 6"%6" "Cleveland.
Shear, alligator, 14", 2", 2" & 4".
Shear, angle, 6"%6" "Cleveland.
Shear, alligator, 14", 2", 2" & 4".
Shear, angle, 1", 2", 2" & 4".
Shear, say, 20" x18 ga, Blins power.
Shear, squ, 1" x14 ga, Kutscheld.
Shear, 12" x1" Wheeling, 21" gap, m.d.
Shear, 12" x1" wheeling, 21" sap, m.d.
Shear, 12" x1" wheeling, 21" sap, m.d.
Shear, 12" x1" whoeling, 21" sap, m.d.
Shear, 20" x1" sap, 20" x1" Welders, spot and butt.

Pittsburgh, Pa.

#### FOR SALE BY

United Mchry, & Supply Co.,

Drill, Detroit 5-spindle. Drini, Detroit of Spinale.

Lathe, American 18"x12" q. c.

Millers, Nos. 2B & 1\frac{1}{2}B c. p. drive,

Pipe threader, Oster I to 4" dies.

Press, No. 40 Swaine arch.

Press, No. 40 Swaine arch. 1241 Walton St., St. Louis, Mo.

Punch, Ryerson 1" thru 1", m. d. Punch, gang, 32" bet. housings. Rolls, (3), 7 x", 6 x3", 6 x3". Shaper, 24" back geared. Shear, 42" gap, 52" squaring. Shears, 16"x14 ga., 6 x16 ga.

#### FOR SALE BY

Severin Machinery Corporation,

Bending roll, 14' Cleveland 4". Bending roll, 14 Cleveland 4 Boring mill, Cincinnati 8' vertical. Boring mill, Sellers, 102" Boring mill, Bullard, 66". Boring mill, Bullard, 66". Boring mill, hor. No. 31 Lucas, m.d. Grinder, 18A Bryant chucking. Hammer, Beaudry, 250 lb. Hammer, Beaudry, 50 lb. Hammer, 8N Nazel.

Mill, horiz , Fosdick 3" bar.

30 Church St., New York, N. Y.

Miller, No. 3B Brown & S., plain.
Miller, 32" x12" Ingersol 14 heads.
Pipe machine, 2" Williams, new.
Pipe miller, 24 to 25" Williams, new.
Pipe miller, 24 to 25" Williams, new.
Pipe miller, 24 to 25" Williams, new.
Planer openside, 38x38x19 D. & H.
Radial, 4" Western, new.
Saw, Laidlaw metal.
Sand blast cabinet.
Scale, Howe track, 125 tons,
Staper, 22" Smitt & Mills, new.
Thread miller, 45" P. & W.

#### FOR SALE BY

Wm, C. Johnson & Sons Machinery Co. 1211-1223 N. 12th St., St. Louis, Mo.

BOLT AND PIPE MACHINES 14" to 6" Jarecki. 22" to 8" Williams. " Landis double head.

1 Landis double head. 14" Merriman.

DRILLS Barnes back geared.

3' American, triple purpose radial. 14" Mason high speed sensitive. 20" Champion.

22" Barnes back geared. Wells Bros. universal.

1-spindle Avev. 2-spindle Allen. 3-spindle Avey. GRINDERS 12"x60" Landis universal.

14"x10' Lodge & Shipley, q. c. g. 24"x 29"x10' Bradford. dr 24"x10' Le Blond. 38"x 38"x15' Lodge & Shipley, q. c. g. MILLERS.

No. 1 U. S. hand. No. 0 Burke bench. No. 2 Le Blond universal.

PRESSES No. 1 Bliss toggle. No. 3 Toledo.

No. 3 Toledo.
Stiles & Parker drawing.
SCREW AND TURRET MACHINES.
SCREW AND TURRET MACHINES. No. 2 Warner & Swasey hollow hex.

No. 3-AWarner & Swasey.
SHAPERS AND PLANERS 16" Smith & Mills shaper. 32" Cincinnati shaper.

Bar shear, 5"x1". Hammer, 60 lb. Bradley helve. Hammer, 250 lb. Little Giant.

Hammer, 600-lb. steam.

LATHES 24"x14' Whitcomb-Blaisdell, motor driven 36"x15' American.

No. 3 Rockford hand. No. 3 Brown & Sharpe universal.

No. 5-B Brown & Sharpe. No. 24 Toledo cam drawing.

3"x36" Jones & Lamson.

36"x36"x12' Cincinnati planer. MISCELLANEOUS

Punch. No. 14 W. W., 12" throat. Saw, No. 17 Higley cold. Tapper, auto., Rickert & Schafer.

#### FOR SALE BY

#### The Jones Machine Tool Co., Front & Pike Sts., Cincinnati, Ohio

Bor. mill, No.32 G.& L. hor.,3" bar. Car wheel borer, 36" Niles. Car wheel borer, 36" Niles. Gear cutter, No.13 Brown & Sharpe. Gear hobber, No.12 Barber Colman. Grinder, surf., No. 1 Diamond m. d. Lathe, 16"x10" Hendey q. c. tie bar-Lathe, 79" dbl. head, driving wheel. Lathe, turrer, Nos. 2A & 3A W. & S.

No.32 G.& L. hor., 3" bar. Miller, No. 3 Cinti. high pwr., s. p. horer, 48" Nilea. No. 13 Cinti high power s. p. Miller, No. 2 Miller, No. 2 Cinti high power s. p. Miller, No. 3 Cinti high pwr., s. p. Miller, No. 3 Cinti high pwr., s. p. willer, No. 2 Cinti high pwr., s

#### FOR SALE BY

#### Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Auto. screw mch., No. 0G Brown & S., serial no. 4290 with a. c. motor Automatic screw machine, No. 0 B. & S., serial no. 3830	450. 800. 325. 450. 200.
Auto, screw mch., No. 0G Brown & S., serial no. 4290 with a. c. motor Automatic screw machine, No. 0 B. & S., serial no. 3830  Auto, screw mchs. No. 0 B. & S. nos., 3340, 3495, 3831, slotting att. each	800. 325. 450.
Automatic screw machine, No. 0 B. & S., serial no. 3830	325. 450.
Auto, screw mchs. No. 0 B. & S. nos., 3340, 3495, 3831, slotting att. each	450.
Automatic screw mche. No. 0 B. & S. turret former, serial no 3123	
	AUV.
	750.
	500.
	500.
Drill, 4-spindle L. & G., h. s., b. b., tapping attachment on I spindle;	500.
p. f. 2 spindles, 1 plain spindle	700.
Gear cutter, B. & S. No. 3 26" for spur gears	300.
	150.
	250.
Grinder, No. 2 Brown & Sharpe automatic surface, magnetic chucks	150.
	150.
Grinder, No. 7 Gardner 30", b. b. with press, belted motor drive	325.
	150.
Lathe, 18"x6' Hendey quick change, taper attachment serial no 19189.	900.
Lathe, 18"x7' South Bend, q. c., a. c., motor drive and chucks	600.
	125.
Lathe, 18"x8' Davis heavy duty, q. c. g., d. b. g., 14" 4-jaw chuck	550.
Lathe, 30"x13" H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs	250.
Miller, No. 3 Cincinnati, cone drive, old style	350.
Lathe, 30"x13" H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs	100.
Miller, No. 1 Garvin universal, fully equipped	150.
Miller, Cleveland universal, No. 1 g. h., fully equipped	750.
Miller, No. 2 MU. Garvin universal, fully equipped	580.
Miller, Briggs, G. & E. manufacturing, 16"	150.
Miller, No. 5 Becker vertical, no rotary	525.
Miller, No. 7 Becker, Lincoln type	25.
Miller, No. 21 Garvin power feed, oil pump	50.
Miller, Hendey, Lincoln type	100.
Miller, No. 12 Brown & Sharpe production type	50.
Miller, Ingersoll slab, 42"x36"x9'	100.
Planer, 24x24x8 Fitchburg, 1 head	.009
Planer, 36"x36"x12' Cincinnati with 2 heads	.009
Press. No. 4 Rockford o. b. i. punch, 29" stroke, 3500 lbs	175.
Press brake, 10' Ohl power, No. 10 gauge	500.
Press brake, 16' Ohl power, No. 10 gauge	125.
Screw machine, No. 0 Brown & Sharpe hand	50.
	75.
Separator, oil. American 1) bushel	100.
	50.
	50.
	00.
	50.
Purret lathe 24"v36" Acme with chucking equipment	00.
	100.

#### FOR SALE BY

#### Taylor-Hall Welding Corporation, 99 Hope Ave., Worcester, Mass.

WELDERS Thomson No. 100, 20k. w. spot weider. Thomson 7A auto. but welder, and Thomson 7A auto. but welder, and Thomson 7A auto. but welder, cap. 4"

Toledo 8B butt welder, cap. \$". Toledo No. 3 butt welder, cap. 4"
National 11-A butt welder, cap. 2"
Toledo No. 6 butt welder, cap. 1"
National 15-A butt welder, cap. 2" Thomson 2-C butt welder, cap. # New machine guarantee with every welder.

#### FOR SALE BY

#### Brandt Machinery Company,

Brandt Machinery Company,
Boring mills, \$4" Niles 2 heads.
Bor, mills, 44" & \$4" Bullard-Maxi.
Boring mill, \$4" & 54" Bullard 2 heads.
Brake, 10 'x9" D. & K., leaf type.
Black, 50" 32, 16" L. & N. pr. type.
Bulldozers, Nos. 2, 4, 5, 28,27,29,9.
Flanging machine, \$4" McCabe.
Forging mch., 2" 22" Acme, steel.
Forging mch., 3" Acme, grind, ball.
Forging mch., 3" Acme, grind, ball.
Forging mchs., 3" 4", 5", 7" Ajax.
Lathe, 21" 30" L. & S., g. h.
Lathe, 40" x20 L. & S., g. h.
Lathe, 48" Molanch, q. c. g.
Lathe, 18" Monarch, q. c. g.

#### 50 Penn Ave., Pittsburgh, Pa.

30 Fenn Ave., Pittsburgh, Ps.
Milling mch., No. 2 Ohio, pl., cone.
Milling mch., No. 2 Ohio, pl., s. p.d.
Press, No. 168 Toledo, tol. s. p.d.
Press, No. 28 Bliss, 28° & groke.
Press, No. 21 Bliss 28° & ricke.
Press, No. 21 Bliss 28° a ricke.
Press, 24B Bliss toggle.
Pipe machine, 6° Landis, A·1.
Pipe bender, Cix type B, univ.
Shaper, 20° & B. e., cone (bargain).
Shear, allig., Carlin 2°—12° blade.
Shear, alig., Canton No. 2—17° blade.
Shear, squaring, 10° x18° H. & J.
Shear, squaring, 10° x18° B. & Betrsch.
Thread roll, No. 50 Waterbury 3°.
Thread roll, No. 40 Waterbury 3°.
Tur.lathe, No. 2 Acme univ. (bargain)
Welder, 300amp. arc. gaseng., bargain. Welder, 300 amp. arc, gaseng., bargain.

May we have your inquiries?

#### FOR SALE BY

#### Wigglesworth Machinery Company

#### 170 Summer Street,

Blocks, Johansson blocks, like new. Boring mill, No.0 Giddings & Lewis, 3}" bar. Boring mill, No. 35 Landis. Boring mill, 144" Niles. Boring mill, 96" Niles. Boring mill, 96" Niles.

Boring mill, 34" Bullard. Boring mill, 36" Bullard New Era. Boring mill, 24" Bullard, rap. prod. Drill, 3-spindle Pecorp.

Drill, 4-spindle Avey. Drill, 6-spindle Leland. Grinder, No. 7 Gardner, like new. Grinder, No. 27 Blanchard, 60" chk. Grinder, No. 3 Bryant semi-auto. hole.

Hammer, 2000 and 3000 lb. new board drop, price. Hammer, 6000 lb. Sellers, steam. Lathe, 12"x3" Vernon.
Lathe, 14"x 6" Hendey, taper.

Boston, Mass.

Miller, No. 1 B. & S. plain. Miller, No. 2 Cincinnati universal. Miller, No. 2B Kearney & T. univ. Miller, No. 4 Cincinnati s. p. d. Miller, 24" Cincinnati automatic. Miller, 60"x12' Newton planer type slab.

Miller, 24"x12' Ingersoll slab. Planer, 84"x56"x16' Gray, 4 heads. Planer, 72"x60"x16' Detrick & Harvey open side, like new. Press, No. E-51 Ferracute knuckle

Press, No. E-51 Ferracute RIUGRIE joint, Press, No. 3-A Bliss, Press, No. 1894 Toledo toggle, Screw machine, No. 3G B. & S. Screw machine, 2½" Gridley, 4-spdl. Shaper, 15" Potter & Johnston. Shaper, 16" Gould & Eberhardt. Shaper, 16" Steptoe. Shaper, 16" Steptoe. Shaper, 24" Stockbridge. Slotter, 36" Newton.

#### FOR SALE BY

#### Wachs-Gregg & Co.,

#### Telephone: Randolph 1822

Boring machine, Giddings & Lewis No. 32, with a. c. motor. Boring mill, Bullard 60" foring mill, Bullard 69". Drill, Cincinnati Bickford 3' radial, Drill, W. E., gang 6' radial. Drill, W. E., gang 6' radial. Drill, Foot Burt 24" heavy duty, Drill, Harrington, 61 B, multiple. Drill, Woodward & Rogers Sapdi. Drill, Pratt & Whitney No. 12 mult. Foot lathe, Warner & Swaney No. 3. Conditions of the Control of the Control

#### 117 N. Jefferson St., Chicago

Lathe, Bradford 32"x18 Lathes, Rockford 15"x6'. Lathe, Whitcomb-Blaisdell 18"x8'. Milling machine, Cinn., No. 2 univ. Milling mche., Rockford No. 0 plain Planer, Belmer, 48"x48"x12', 3 hds. Press, Niagara No. 5 o, b. i. Press, new Swaine No. 73 dbl. crank Screw machine. Foster No. 4. Shaper, Cincinnati 20 Turret lathe, Pratt & Whitney #"x4#"

Turret lathe, Warner & Swasey No. 2 A, chucking machine.

#### FOR SALE BY

# McDonald Machinery Co.,

Hammer, Mayer 100 lb. upright.

Air compressors, Curtis 10x10 m. d., double cyl.; DeVilbliss 8x6. Bolt machines, Landis & Acme 1 hd.,

It" capacity.
Boring mill, Lucas No. 21 horizontal,

24"; Woods 3' Boring mills, 4 Bullard 42" low price. Brake. D. & K. 6' 10 gauge, power. Cut-off mchs., 4 Davis 6" capacity. Drill, Moline 4 spindle and 32 spdle. Drill, Foote-Burt 4-sp. No. 2 gang. Drill presses, Allen and Sipp 4-spdl., h. s., b. b., power feed to spindles.
Drill, Cinti-Bi k. 3 s.p.g. box rad.
Drills, Leland-G l-sp. h.s., b.b. floor. Drills, Leiand-t-1-sp. n.s., b. 5, noor, Drills, Spp 1-spindle, h. a., b. b., H. & W. 2-spdl.; H. & W. 6-spdl. Drills, 20°, 24", 25& 25" b, g., & tap. Gear holber, G. & E. 24" Grinders, B. & S. No. 2 universal; B. & S. No. 2 universal;

generator.

Grinders, modern internal; Blount Grinders, mouern interactions of the state o

Grinder, Cin. No. 13 univ. tool & c. Hack saws, 6x6 Racine & Peerless hi speed; Racine 8x8 h. s.

Keyseater, Mitts & Merrill No. 2. Keyseater, Mitts & Merrill No. 2.
Lathes, Hendey 14"x8" q. c. g. yoke
head; Davis 22"x10" q. c. g.;
Sidney 16"x6" q. c. g. LeBlond
16"x8" Whitcomb-B. 22"x8" q. c. g.
Monarch 16"x8"; C. & J. 15"x8";
Superior 18"x8"; L. & S. & Cinti,
16"x8", q. c. g.; American 22"x10"
q. c. g. geared hd.; American 16"x8" q. c. g.; Lehmann 18"x7' q. c. g.; 40 assorted sizes, quick and loose change gear.

#### 1535 N. Broadway, St. Louis, Mo.

Lathes, Greaves-Klusman 24"x16' standard change with chuck.

Milling machines, Ohio No.20 plain, LeBlond No. 3-H; Brown & S. No. 3; B. & S. No. 3-B pl., s.p.d. American No. 12; Kempsmith No.1 Cincinnati No. 3; Becker No. 25 all plaiu; Kemp No. 3; Cincinnati No. 1‡; Ohio No. 29 all universal B. & S. No. 5 vertical; Cincinnati 18" mfg; Becker No. 2-H vertical. Milling and drilling mchs., Knight

No. If with power feed, vertical. No. 19 with power feed, vertical. Pipe machine. Curtis 3°, motor dr.; Merrill 4"; Curtis 2° to 12° m. d. Planers. Gray 28"x28"x6'. 1 head; Cincinnati 36"x38"x18' 2 heads; Pond, 36"x36"x12' table, 18' bed, 2 heads; Flather 24"x24"x6'; Gray 24"x24"x6'; Bray 24"x24"x6'; Gray 24"x24"x6'; Gray 24"x24"x6'; Gray 24"x4"x6'; Gray 24"x4"x6'; Gray 24"x4"x6'; Gray 24"x4"x6'; Gray 24"x6'; Gra 24"x24"x6', I head.

Punches, Reade 15" s. e., I" in Punchers, Reade 15° s. e., 1° in 1°, Puncherses, 4 Consolidated No. 2; Federal Nos. 1, 2, 3 and 4; Blins No. 19; 2 horn presses; Niagara No. 3; Sidney No. 2, o. b. 1. Screw machine, Cleveland 21° auto.: F. & W. No. 2 hand; Foster No. 3 hand; Woods No. 2 tilted turrele.

hand: Woods No. 2 tilted turret. Milholland No. 4 b.g. hand: Foster No. 7 hand b. g.; W. & S. No. 1. Shaper or alotter, vert., P. & W. 6'. Shapers, S. M. 16': 34'', Queen City 24'' back geared; G. & E. 16'', b.g.; Niles travelling head; Milwaukee 18'' b.g.; Walcott 39' b.g.; S. & M. 24' and 24'' b. g.; Oho 18'', Cincinnati 20'', b.g.; Rhodes 2'', Queen City 18'' b. g.; Potter & J. 18''. Shears, 60'' thrt. rotary slitting, (2), Square shears. Niagara 62'' power. m. d. 18-ga.; Ohl 8' power 18 gauge. Thread miller, Lees-Bradner No. 54. Turret lathes, Warner & S. No. 2A.

#### FOR SALE BY

#### Brownell Machinery Co., 150 Pine St., Providence, R. I.

BORING MILLS. 36" Bullard New Era vertical turret lathe, 4-jaw chuck table, cutting lubricant system.

DRILLS 23" Snyder stationary head. 3' Prentice radial.

28" Snyder sliding head.

GEAR CUTTERS AND GRINDERS

GEAR CUTTERS AND GRINDERS 4-spindle Barnes p. f. No. 3 Brown & S., spur gear 26". No. 13 Brown & S., spur & bevel. 20" Blount wet tool.

No. 6 Diamond disc, 18" No. 2 Brown & Sharpe surface. Grand Rapids twist drill 21". No. 13 B.& S. universal & tool.

LATHES 24"x27' Fitchburg. 18"x 8' Springfield "Ideal". 13"x 5' Blount speed. 30"x20' Fitchburg.

MILLING MACHINES Model "AB" Becker vertical. No. 0 Brown & Sharpe plain. No. 14 American universal.

Model AD B. & S. manufacturing.
No. 13-B B. & S. manufacturing.
No. 1 Brown & Sharpe plain.
SCREW MACHINES & TURRET LATHES.

2"28" I nose & Lamso

16" Warner & Swasey, g. f. h. 1" No. 4 W. & S. grd. friction hd., 3"x36" Jones & Lamson flat turret. MISCELLANEOUS.

Hammering mch., No. 2 Langelier. Hammer, pwr forg., 80 lbs. Bradley. Planer, 20"x20"x4' Fitchburg. Punch press, No. 2 Manville. Screw press, No. 3 Standard. Tapping machine, No. 1 Garvin vert

#### FOR SALE BY

#### Strafer Machinery Company,

14th and Provost St., Jersey City, N. J.

BORING MILLS 100" Sellers s. p. d. rapid traverse. 72" Sellers rapid traverse, m. d. 51" N.-B.-P. single pulley drive. "Cincinnati s. p. d. rapid traverse. 84" Bullard belt drive. 24" Bullard side head.

GEAR CUTTERS No. 6 Cincinnati 60"x20" m. d. o. 5A. Lees-Bradner a. c., m. d.

GRINDERS 6"x32" Norton, overhead counter. No 8 Badger disc, 30" wheel. 16"x52" Landis self-contained. 16"x48" Landis crankshaft.

KEYSEATERS No. 5 Mitts & Merrill belt drive. No. 4 Mitts & Merrill extra equipt.

LATHES 84"x46' Putnam modern.
42"x36' Pond cone type.
60"x21' Pond, t. g.
40"x22' Prentice, blocks and chucks.
42"-10"x16' Fay & Scott slide gap.
42"x36' Niles t. g. belt drive.
Pf. A. a.5., 36"x18' Prentice g. h. 36"x16' Rahn-Larmon g. h., m. d. 42"x14' Bridgeford geared head. 24"x12' Lodge & Shipley. 16"x10' P. & W. geared head, t. a.

21" Gisholt turret lathe.

PLANERS. 30"x30"x14' Whitcomb, 2-heads. 30"x30"x6' Powell 1-head. 48"x48"x16' Pond 4 heads, b. d. 36" D. & H. open side 1-head.

PRESSES 400 ton W. S. hydraulic 73"x20'. Ferracute No. 32 Bliss double crank, 44". No. 87 Ze. No. 42 Bliss double crank, 32". S-134 Fer MISCELLANEOUS. Ferracute s. r. g. 103 geared. No. 87 Zeh & Hahneman grd. arch. S-134 Ferracute 82" bet, uprights.

Beading machine, Bliss, Boring bars, portable, 4"x8'. Caterpillar ditcher, B. & G. 24"x8'. Chuck jaws set for boring mill. Compressor, I.-R. 8"x8" horis, m.d. Compressor, C.P.T. Co. 5#"x5" vert. Drill, Rockford right angle horiz. Lathes, Oliver pattern, slide gap. Pipe machine, 6" Saunders with dies. Wire straightener, core, to 5/16",

#### FOR SALE BY

Foster Machinery Company,

Drill, No. 2 Bausch multi-spindle. Draw bench, 12' Waterbury-Farrell. Draw Gench, 12 waterogry-Farrer, Hoists, elect., 3.5 & 10 ton Euclid. Lathe, 20"x84 American geared hd. Lathe, 16"x10 Whitcomb & Blaisdell. Lathe, 19"x12" LeBlond heavy duty. Punch, EF Cleveland, 72" throat. Riveter, 3-A High Speed. 2613 E. 73rd St., Cleveland, Ohio Riveters, air, 30 ton & 50 ton Hanna. Rotary planer, 50" Cleveland. Shaper, 24" Gould & Eberhardt. Shear, 12'x14 ga Loy & Nawrath. Turret lathe, No. 3-A Warner & Swasey univ., chucking equipt. Welder, National butt, cap. 1".

#### FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Drill presses, 50 from 10" to 34".
Miller, No. 2 Cincinnati universal.
Planer, 20"x20"x4'.
Presses, Nos. 2 & 3 Toledo o. b. i.
Shaner, 20"Sando, 8 Miller, 10 from 10 Shaper, 16" Smith & Mills light.

E. L. Klauber (1972)

14"x 6' Davis tool room, q. c. g. 22"x1z 24"x10' Lodge & Shipney 20"x 8' Monarch q. c. g. 30"x14' Bradford. 30"x14' Bradford. SCREW MACHINES AND TURRET LATHES. No. 2 Wood tilet durret. No. 4 Wood tilet durret, No. 56 National-Acme 4-spindle.

Shaper, 20" G. & E. b. g. Spot welder, 25 k. w. Tapping machines, St. Louis and Garvin.

#### FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road. Automatics, No. 53 National-Acme. Drill, D.-S. Colburn heavy duty. Grinder, 12"xM\* Modern plain. Grinder, No. 14 Gardner disc. Grinder, No. 14 Gardner disc. Hi-Speed, Hoists, electric, 1 & 2 ton, d.c. mtrs. Lathe, 16"x6" Springfield brass. Lathe, 17"x3"x8" Fay & Scott gap. Lathe, 27"x1"x8" Reed, bargain. Lathe, 48"x19" & Bettis-Bridgeford. Lathe, 3"x36" J. & L. flat turret. Lathe, 18"x16" & L. & S., q. c. g. Lathe, 21" Gisholt turret, 29. Lathe, 21" Gisholt turret, (2). Lathe, No. 5 Foster turret, grd.fr.hd.

N. S. Pittsburgh, Pa. Miller, No. 2 Ohio plain, (2).
Miller, No. 3 Cincinnati plain, m.d.
Miller, 38"-42" x18" Newton slab.
Milling mch., No. 2 Cinti. univ., b.d.
Pipe machine. 6" Jareski, m. d.
Planer, 24"x24"x8 Powell, I head.
Planer, 30"x30"x8' Powell, I head.
Planer, 38"x36"x12' Cinti. 2 heads. Planer, 30 240 212 Cluth 2 heads.
Planer, 30 240 212 Cluth 2 heads.
Press, No. 34 4 Tole (2).
Press, No. 34 4 Tole (2).
Press, No. 39 Blins horning.
Press, No. 29 Blins horning.
Press, No. 21 Blins, o. b. i.
Punch, No. 21 Blins, o. b. i.
Punch, No. 21 R. J., hornizontal m. d.
Punch, Develand, 50" thrt, 2"x1".
Radial drill, 2" Clu-Bickford, g. b.
Radial drill, 4" Foodick s. p. d., g. b.
Seamers, Blins, Leffler & Max Ams.
Shaper, 20" Stockbridge b. g. crank.
Shapers, 24" 22" G. & E., m.d., b.g.
Shear, Model 0-15 Unishear, m. d.,
Shear, bar, No. 14 W. & W. cap, 2"rd.
Shear, No. 10 H. & J. guillotine, b.d.
Shear, No. 10 Blins circle, b.d.
Shear, No. 10 Blins circle, b.d. Shear, No. 103 Bliss circle. Tapper, nut, \ Acme semi-auto.
Turret lathe, 30" Gisholt, belt drive.

Lathe, No. 5 Foster turret, grd.fr.hd. Lathes, No. 4 W. & S. tur., g. f. h. Miller, No. 2A Milwaukee plain. Our warehouse is full of bargains. What have you for sale?

#### FOR SALE BY

Brown Machinery Co.,

Drills: 24", 26" and 32" Barnes and Rockford; 4-spindle Moline hole hog No. 66D

Gear hobbers, G. & E. 12" and 24". Grinders: No. 6 Besly dbl. spindle; No. 220 Badger auto, disk; 12x30" Modern, plain s. c. c. s.; No. 12 Brown & Sharpe, univ., tool, m.d. Hammer: 40 lb. Bradley, helve; 50 lb.

Mayer upright. athes, 30" x 12' Blaisdell: 26" x 12' Write for prices; send us your inquiries for shop equipment and sheet metal working machinery. We have the stock.

2323 N. 9th St., St. Louis, Mo.

Putnam, hvy, duty, 20"x12 Lodge & Shipley, q. c. g.; 18"x8' Prentice geared head; 18"x8' Lodge & Shipley q. c. g.; 16"x8' Monarch q. c. g.; 14"x5' and 12"x4' Seneca Falls q. c. g.

G. C. g.; 18"25 and 12 XI Seneca Falls q. c. g. Millers: No. 3 Fox: No. 4 Hendey Lincoln. Press, No. 7 Zeh & Hahneman. Threaders: 4" Geometric: National 14" double hd.; No. 734 Greenfield.

#### FOR SALE BY

The E. L. Essley Machinery Co. 551 W. Washington Blvd., Chicago

Telephone Randolph 9191 Bolt cutter, \$ to 2\$" Landis, Acme. Bor. mill, 24" & 42" Bullard New Era Bor. mill, 24" & 42" Bullard New Era Drill, Avey, Allen, Leland-Gifford, Grinder, No. 1 Le Blond universal, Hammer, No. 5A High Speed rivet, Hobber, Nos. 3 & 12 Barber-Colman Lathe, 14" 36" American m. d. Lathe, 20" x18" Sidney. Lathe, 25" x12" Sidney. Lathe, 33" x16" Le Blond, geared bd. Miller, No. 2 & 3 Cincinnati plain. Miller, No. 2 & 3 Cincinnati plain. Miller, No. 3 Sundstrand Rigtdmil. Miller, No. 3 Sundstrand Rigtdmil. Miller, No. 3 & H. & & T. vertical. Fipe mehe, 6" Landis, 6" E. C. & B. Planer, 16" Miles plate.

Planer, 22"x22"x5' Gray. Planer, 36"x36"x14' Chandler. Press brake, 10'-6" Ohl, 10 ga. cap. Presses, No. 165-B Consolidated gd. Presses, No. 18-B Consolidated gd. Presses, Nos. 19 and 21½ Bliss. Presses, No. 5 Bliss-Consolid. o.b.i. Radial. 2½ & 6' Am. 3' & 5' Cin-Bick Saws, 6''86' Peerless, No. 12B Higley. Screw mchs., Nos. 5 & 6 Wood tilted Screw mcns., Nos. 3 & 9 wood tite Screw mcns., No. 4 Warner & S. Shapers, 20" S. & M., 24" G. & E. Shapers, 32" Columbia. Shear, 42" Stoll. 16 ga., Shears, 62" Niagara 14 ga., m. d. Turret lathe, No. 1-B Foster chuck.

#### FOR SALE BY

Geo. M. Bernstein & Co., - 221 No. Elizabeth St., Chicago, Ill.

Bench lathe, Ames 1', 19 collets.

Bench miller, Ames precision univ., dividing head, vise, collets.

(The above is one unit on bench with countershafts).

Drill, \* L. & G. ball bearing, tapping attachment.
Drill, \* Avey ball bearing, (4).
Drill, \* Avey ball bearing, (6).
Drill, \* , 3-spindle Allen ball bearing, (2).
Drill, \* , 3-spindle Allen ball bearing, (2).

Drill, ", 4-spindle Allen ball bearing. Drill, 28" Cincinnati single head, back geared, power feed.

Drill, 8", 4-Spinuse Auen.
Drill, 8", 4-Spinuse Auen.
Drill, 28" Cincinnati single head, back geared Gear hobber, No. 3 Barber-Colman.
Miller, No. 18 Garvin plain.
Miller, No. 18 Rockford plain, vertical head,
Miller, No. 3 Kempsmith plain.
Punch press, No. 8 Billss o. b. i., (23).
Punch press, No. 3 Consolidated o. b. i.
Punch press, No. 3 Consolidated o. b. i.
Punch press, No. 3 Rockford.
Riveter, No. 4-A High Speed.
Riveter, No. 4-A High Speed.
Shaper, 13" Smith & Mills.
Shaper, 13" Smith & Mills.
Shaper, 18" Milwaukee, back geared.
Shaper, 18" Steptoe, back geared.
Shaper, 24" Rockford, back geared.
Shaper, 24" Rockford, back geared.

100 other tools in stock, send us your inquiries.

#### FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill. Drill, 3-spindle Washburn with p. f. Drill, 3-spindle washburn with p. 1. Grinder, No. 2 Wisconsin universal. Lathe, 14x6 Hendey, q. c. g. Lathe, 14x8 Champion, q. c. g. Lathe, 18x6 Ryerson q. c. g., taper.

Miller, No. 2 Oesterlein univ. s p.d. Miller, No. 2 Rockford plain, h. d. Plauer, 24"x24"x6' American. Shaper. 26" Ohio heavy duty. Shaper, 24" Rockford, b. g.

#### FOR SALE BY

#### Miles Machinery Co.,

Automatic, 14" Fay. Automatic, 14" Fay.
Broach, No. 4 Oligear.
Bulldozer, Nos. 2 & 7 W. & W.
Compressor, 9"x8" Ing.-Rand,
Drill, radia! 3' & 4' American.
Grinder, 12"x72" Landis.
Grinder, universal No. 3 B. & S.
Grinder, cylinder, 80 & 58 Heald.
Grinder, crank, 16"x68" Landis. Hammer, 180 lb. Bradley. Keyseater, Nos. 0 & 1 Baker. Lathe, 14"x6' LeBlond. Lathe, 28"x14' Putnam.

Saginaw, W. S. Mich. Saginaw, W. S. Mich. Lathe, turret, 24° & 34° Ballard. Mill. boring 96° Betts. Mill. boring 96° Betts. Mill. horis. 46° bar Defiance. Miller, 14 AS, 2B & 3B Milwaubee. Planer, 37°×32° X12° Nilles. Planer, 48°×36° X16° Cincinnati. Planer, 72°×60° X14° Cieveland. Press, 1000 ton Bliss coining. Press, No. 58° Toledo, s. E. Shear, squaring 16° X16 ga. Kutacheid Threader, 14°, 24° & 3° Acme. Upsetter, 4° Ajax & Acme.

#### FOR SALE BY

#### Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O. LATHES

LAI	HES.
60"x16' New Haven	19"x12' Sidney, q. c
39"x14' Prentice, q. c 775.	18"x8' Mueller q. c., (4)
27"x14' Pond, q.c 675,	18"x8' American, q. c
26"x48"x10' McCabe dblspdl. 775.	17"x8' LeBlond, q. c
21"x10' LeBlond, q.c 850.	
MILLING !	MACHINES.
No. 2 LeBlond universal.	No. 2 Cincinnati vertic
No. 3 Cincinnati, single pul \$1100.	speed attachment
No. 4 LeBlond plain 750.	No. 4 Cincinnati vertica
No. 5 Becker-Brainard 775.	No. 2 Cincinnati univer
BORING	
24" Bullard, New Era	2#" Cleveland horizont
36" Bullard New Era 2900.	rotary table
36" Niles, 2 heads 375.	
	D SHAPERS.
25"x25"x8' Putnam \$ 450.	32"x20' American, 2 her
36"x12' Detrick & H. openside 1375.	34" Gould & Eberhardt
48"x10' Belmer, 4 heads 1050.	24" Potter & Johnston
30"x16' Gray, 2 hds.factory reb. 1480.	16" Smith & Mills, cray
DRILLS AN	
No. 310 Baker heavy duty.	4' Morris, single pulley
6' American, single pulley \$1450.	Fox No. 5 mult. spdl.,
3t Cincinnati-Bickford 875.	Edlund 2 spindle high
of Chicionati-Dickford	ANEOUS.
	Pipe mch., 6" Oster, me
Gear hobber, No. 3 G. & E \$ 475.	Pipe mcn., 6 Oster, me
Gear hobber, 36" Adams 800.	Pipe machine, 12" Curi
Grinders, No.120 Gardner disc.	Presses, more than 50
Grinders, B. & S. planer type.	and inclinable machin
Grinder, Reed & Wilmarth & M.	Stitching machine, Me
Hack saws. 6"x6" Racine \$ 75.	Shear, 14 ga Bertsch, 8'
Hack saws, 8"x8" Racine 160.	Shear, 14 ga Bertsch, 8'
Hack saw, 8" Mass 135.	Slotter, 20" Dill, motor
Motors, up to 75 h. p., 220 v.,	Turret lathes. 2-24"
3 ph. 60 cycle.	spindle; 18" Libby.
a pitt. we cycle.	spinote, is Livey.

11. xs. regiona' d' c	475.
ACHINES.	
No. 2 Cincinnati vertical, high	1950
No. 4 Cincinnati vertical	
No. 2 Cincinnati universal.	

18"x8' Mueller q. c., (4). 18"x8' American, q. c....

#### MILLS. 24" Cleveland horizontal, with . .... . . . . . . . . .

SHAPERS.	
32"x20' American, 2 heads\$	
34" Gould & Eberhardtcrank.	1250.
24" Potter & Johnston crank	
16" Smith & Mills, crank	375.
RADIALS	
4' Morris, single pulley \$	950.
Fox No. 5 mult. spdl., 32"x45".	
Edlund 2 spindle high speed	300.

ANEOUS.	
Pipe mch., 6" Oster, motor dr.\$	
Pipe machine, 12" Curtis	650.
Presses, more than 50 geared	
and inclinable machines.	
Calachine machine Mandage	

Shear, 14 ga Bertsch, 8', gap	175. 725.
Slotter, 20" Dill, motor drive.	
Turret lathes. 2-24" Gisholts spindle: 18" Libby.	of

#### FOR SALE BY

#### A. M. Stoehr Machinery Co.

Balancing mch., Gisholt precision, Baling press, scrap metal, belt dr. Bullard 8" Multaumatic, like new. Drill, No. 216 Becker heavy duty Pipe mche., Saunders cap. 4" to 12".

#### 106 S. Jefferson St., Chicago, Ill.

Polishing machine, Centerless, 3". Rolls, 4'x½" & 3"x5/16" pyr. type. Saw, No. 3½ Ryerson friction. Shears, 52"x14 ga. & 10'x10 ga. Slitter, Yoder 38", 16 ga., m. d.

#### FOR SALE BY

#### General Machinery Corporation,

Drill, Sibley 24" sl. hd., b. g., p. f. Grinder, Landis 6x18 plain, c. s. Lathe, Warner & Swasey 14" turret, Miller, Becker, No. 7H (Lincoln), Miller, Hendey No. 8 (Lincoln).

#### 140 Federal St., Boston, Mass.

Polishing machine, Production Machine Co. type-A vertical. Press, Niagara No. 2 flywheel. Shaper, Hendey 15" friction. Shaper, Potter & Johnston 15" univ.

#### FOR SALE BY

#### Modern Machinery Co.,

120 Centre St., New York, N. Y.

Drills, 1, 2, 3 & 4-spindle Sipp, Avey, Henry & Wright high speed, Lathe, 16"x8" Hendey, taper attachment. Radial, 3" Dreses, gear box drive. Radial, 4" Morris, cone drive. Shaper, 30" Hendey.

#### FOR SALE BY

#### Brandes Machinery Co., . .

Drill, Minster 3" m. d. 90% new. Drill, 31" Cin.-Bick. s. p. t. a. Lathe, 24" X12" B. & E. q. c. d. b. g. Lathe, 27" X16" Prentice. Mill, 54" Bullard Maxi, ser. 11,600. Mill, 6" hor. Diet. & Har. floor type.

1900 Euclid Bldg, Cleveland, Ohio Pipe threader, 12" Bignall & Keeler. Pipe threader, 6" Williams m. d., Planer, 30" x12" Gray, 2 heads. Roll, 72" Peck, Stow & Wilcox, Shaper, 21" Smith & Mills. Welder, 35 k. v. a. Gibbs.

#### FOR SALE BY

#### Randle Machinery Co..

Air compressors, all sizes and types. Bending rolls, 12'x1" cap. Niles, m. d. Bending rolls, 6'x6" Ryerson. Bending rolls, 16'x10 ga. Pexto m. d. Bending rolls, No. 3 Cleveland, belt. Beading machine, Quickwork univ. Boring mills, 24" to 96".
Boring mills, 24" to 96".
Bolt cutters, 1\(\frac{1}{2}\)" and 2".
Brake, No. \(\frac{618}{18}\) D. & K. \(\frac{95\)5}{18}\) new.
Brake, 8' & \(\frac{10}{2}\) x10 ga. Ohl. Drills, all sizes and types. Grinder, No. 14-20" Gardner. Keyseaters, Davis & Catlin. Lathes, 42"x16' Niles quick change. Lathe, 66"x30' Putnam. Planer, 42x42x10 D. & H. openside. Press, No. 5 Bliss d. c. Press, No. 91B Toledo. Also many other bargains.

#### 1733 Powers St., Cincinnati, Ohlo

Press, No. 7M American m. d. Press, No. 4M American m. d. Press, No. 5 Am. Can incl. m. d. Press, Nos 1 & 4 Am. horning m.d. Pipe machine, 6" Landis, m. d.
Pipe machine, 2" Landis m. d.
Press, No. 37 Excelsior 54" arch. pr.
Shapers, all sizes. Shear, No. 662 Niagara. Shear, 16'x14 ga. Stoll, m. d. Shear, No. 848 Niagara. Shear, 16'x3/16' L. & A. m. d. Shear, No. 6 L. & A. universal. Shear, Southwark rotary, No. 8 ga. Turret lathe, 2x24 J. & L. m. d. Welders, 100 to 300 amps. Wheel lathe, 84" Niles m. d. Wheel press, 300 to 150 tons. Send us your inquiries.

UPSETTERS: 34,1,1,14,114,114,2,2,21,2,3,4,5,6,6, and 7 steel frame.

BULLDOZERS: Nos. 1, 2, 3, 4, 5, 7, and 9 Williams & White.

HAMMERS: Bradley Upright-50, 100, 150, 200, 300 and 500 lb. Bradley Cushioned Helve-40, 60, 80, 100 and 200 lb. No. 2B Nazel. 1500 lb. Steam; Yeakley Air Hammer.

SHEARS, Bar Shears, 11/2", 21/2", 31/4" and 5" round. 11/2" Alligator.

SHEARS, Long & A. 4 1/2", Ewart & Kutscheid, 5' 14 ga.

PRESSES: Straight Sided—52A Waterbury with 6 hole dial. 37/2 Bliss, 6" stroke. No. 2 Billings & Spencer Trimming. Solid Back—No. 3 and No. 4 Stiles. No. 3A Bliss, adjustable bed. No. 16 Bliss Horning, Inclinable—No. 16 Stoll. No. 6 Adriance. No. 5 Consolidated, Stoll Inclinable Geared, M. D. 4" Stroke, 6100 lbs.

PUNCHES: Rock River 16\* throat, cap. 1\* through 1\*. E. F. Cleveland. 24\* throat, 1½\* through 1\*. No. 2 Hilles & Jones, 20\* throat, 1\* through 1\*. yoid action. Long & Allaiatter, 46\* throat, 2½\* through 1\*. Williams & White No. 14, 1½\* through 1\*, plane tbl.; Pels Triple Combination Punch Bar and Angle Cutter.

PRESS BRAKE: Loy & Nawrath, cap. 81 1/4", Motor Drive. DIE SINKERS: No. 2 and No. 3 Pratt & Whitney. No. 6 Becker.

DRILLS, No. 30 Natco Multiple, No. 3 Bausch Multiple.

SHAPERS, 24" American: 24" Queen City.

THREADING MACHINES: I and 2 Spindle Acme and Landie. Single and Double Spindle with and without lead screws, ½", 1", 1½" and 2"; Landis 3" Lead Screw.

THREAD ROLLERS: %" and 1/2" capacity.

NIPPLE THREADER: Landis 2º 2-spindle, m. d.

PIPE THREADERS: Landis 69; Sanders 49; Jarecki 69.

COLD HEADERS: Single and Double Stroke, Open and Solid Die, 1/4" to %".

BOLT TRIMMERS: Bolt Headers, Bolt Pointers, Nut Tappers, Hammer Headers, and Hot Pressed Nut Machines.

PIPE CUTTER: Murchey.

NUT TAPPERS, 6 and 8 spindle National and Acme auto. 1/2" to 11/2". BENT TAPPERS: National 1/4", 1/4" and 1/2".

TUMBLING BARRELS. Abbott Burnishing and various types and sizes. FURNACES: No. 65 American Gas. No. 152-154 Rockwell Rotary. No. 1A American Gas Carbonizing.

CHIP CRUSHER OR SHREDDER, Williams.

FORGING AND TAPERING ROLLS.

GRINDERS. Double Disc various makes and sizes.

COLD SAWS, Espen-Lucas and Newton.

SPOT AND BUTT WELDERS, various makes and capacities.

COMPLETE 10° ROLLING MILL.

# Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave.,

Chicago, Ill.

# A Few Outstanding Values of Choice Machine Tools At Low Prices All In Good Condition and Ready for Immediate Shipment F. O. B. Cars Cincinnati

24" Gould & Eberhardt Shaper, single pulley drive, late type	
20 <sup>a</sup> Hendey Back Geared Crank Shaper, 4 step cone pulley belt drive, late type	
248x121 American Geared Head Lathe, arranged for motor drive, late type	
36x18' Lodge & Shipley Lathe, cone pulley drive	1475.
16"x8" Lodge & Shipley Selective Geared Head Lathe, Single pulley drive, with taper att., late type	975.
16*x8' Reed-Prentice Geared Head, arranged for motor drive, late type	600.
No. 22-12" Heald Rotary Surface Grinder, belt drive, with 12" magnetic chuck	800.
No. 13 Brown & Sharpe Universal Grinder, belt drive, with complete equipment	575.
No. 70 Heald Internal Grinder, belt drive	450.
41 Dreses Plain Radial Drill, sgl. pulley gear box dr	975.
6' American Triple Purpose Plain Radial Drill, single pulley gear box drive	2175.
12x72 <sup>8</sup> Landis Plain Self-Contained Cylindrical Grinder, belt drive, late type	600.
36" Bullard Rapid Production Vertical Turret Lathe, belt drive, with turret head and side head	1350.
No. 20 Bliss O. B. I. Power Press, flywheel drive	250.
15 ton Lucas power Forcing Press, belt drive	225.
No. 2 Cincinnati Universal Miller, cone pulley drive,	775

Machines Furnished Complete and Sold with Money Back Guarantee

# THE EASTERN MACHINERY CO. 3265 Spring Greve Ave., Cincinnati, Ohio

# **NEW 3 PHASE MOTORS, 5 H. P. \$61.75**

LATHES 18"x8' American qk, ch., taper att. 18"x10 American, quick change. 20"x10' Hamilton, rapid production.

12"x 3' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd, hd, motor dr.
14"x 6' Monarch, quick change.
16"x 8' Hamilton, quick change.
17"x 8' LeBlond quick change.

TURRET LATHES and SCREW MACHINES
No. 52 National Acme automatic.
No. 53 National Acme automatic.

11" capacity Smurr & Kamen.

No. 54 National Acme automatic. 21" Gisholt, motor drive.

16" O. & S., b. grd., new, low price. 20" Smith & Mills back grd. crank. 20" Ohio back geared, crank.

24" Gisholt, motor drive. 14" Niles, traveling head.

6' Ceiling drill.

Stover.

2x24 and 3x36 J. & L. No. 1 Foster, 13/16" capacity, (2). 1" Pratt & Whitney.

Rockford, back geared, crank, 24" O. & S. back geared crank. 25" Smith & Mills, back grd. crank. 15" Smith & Mills, motor drive.

24"x14' LeBlond. 24"x24' Prentice, with raising block. 8x60" & 3\\$x60" Fitchburg, Lo-Swing

No. 10 and No. 15 Excelsior, foot. Nos. 3-A & 5-A Willard inclinable. Nos. 1, 2 and 3 Federal o. b. i. No. 39 Bliss horning. Nos. 1, 14, 2, 2 Robinson, new. Emco bench.

DRILLS and RADIALS 4-spindle Demco H. S. new. 4-spindle Avey H. S. No. 1 Baush multiple.

Baush 5' radial. Hilbert 3' radial. 22", 24", 26", 28" and 32", sliding hd.

MILLING MACHINES

No. 1 American plain. No. 4 LeBlond plain. No. 25 Bilton. No. 7 Becker, Lincoln type. No. 25 Becker plain, power feed. No. 2 H Brown & Sharpe plain

No. 1 W. & M. surface. 6"x15" Fitchburg plain. 16"x42" Landis universal. 36" and 86" Vates plate. No. 80 Heald cylinder.

Band saw, Clark, compound. Band saw, Napier 10"x10". Blower, No. 6 Piqua, pressure. Blower, positive pressure, Leiman Boring mill, Colburn No. 3, tur. hd.

Brake 10', Keene, 18 ga.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 8x8 and 9x8. Furnace, Weco electric. Gear cutter, No. 3-26" B. & S. Gear miller, Bilton No. 1. Hammer, 150 lb. Standard drop. Pipe machines, 2", 4" & 6". Planer, 24"x24"x6' Gray.

Ingersoll 24" x 20" x 8' horizontal motor drive 18" Cincinnati automatic. Type B Gooley & Edlund.

24" Bickford, tapping attachment. 32" Hoefer, sliding head.

Hoje Hog. No. 68-D, 7-spindle

No. 12 Brown & S. (Lincoln Type). No. 4 Lees-Bradner thread miller. GRINDERS

Schmitt cylinder grinder.

J B X, W. & M. tool and cutter.

No. 10 Besly 18" double disc.

No. 20 Bryant, chucking.

MISCELLANEOUS ANEOUS
Planer, 85",38" z14' Gray, 2 heads.
Planer, 42"x62"x12' Gray, 2 heads.
Rivet. hammers, Nos. 1,2,3,4" A. H. S.
Hammer, No. 2 B Nazel, air.
Sand blast, Boland.
Scale, 1890 lb. Toledo, dial type.
Shear, 88", 18 gauge, power.
Shear, 18", 18 gauge, power.
Shear, 10", 182 Robinson.
Shear, 10" Loy-Nawrath 3/16" cap.
Shear, circular, Pettingel, 80" thrt.
Threading mehe. W. & P. 2-spindle,
Washing machine, parts Blakeslee.
Welders. 200 amp. Lincoln, arc (2).

# **Unusual Machine Tools**

1—Practically New 42° Widened to 54°x42° High x16′ Table G. A. Gray Company's Maxi Service Planer with two heads on cross rail, with side heads on front and rear housing, with table widened to 50°, direct connected motor drive with 25 HP, 230 volt, direct current reversing motor with General Electric rheostat controller complete with 3 HP Louis-Allis 440 volt, 3 phase, 60 cycle motor for rapid traverse, elevating rail, etc. complete with 21 KW General Electric D. C. generator—Type CD-25, 250 volt, 1750 RPM direct connected to a General Electric 30 HP, A. C. motor wound for 440 volt, 3 phase, 60 cycle. This machine has not had six months' actual use.

14\*x6¹ American Compound Rest, All Geared Head, Quick Change Gear, Engine Lathe, complete, belt driven.

16\*x12' Prentice Compound Rest and Taper Attachment, Quick Change Gr., All Grd. Hd., Belt Driven Lathe, complete with regular equipment.

20°x10′ Prentice Compound Rest, Quick Change Gear, All Geared Hd., Single Pulley Drive, Belt Driven Engine Lathe.

No. 2-A Milwaukee Plain Constant Speed Drive Milling Mche., belt dr.

No. 4-B Heavy Brown & Sharpe Plain Constant Speed Drive Milling Machine, taper nose spindle, rapid traverse, belt drive.

No. 5-B Heavy Brown & Sharpe Plain Constant Speed Drive Milling Machine, taper nose spindle, rapid traverse, belt drive.

31 Arm American Enclosed Head Plain Arm Radial Drill with tapping attachment, gear box belt drive, with plain box table.

41 Arm Cincinnati-Bickford Single Pulley Drive Gear Box Plain Arm Radial Drill with tapping attachment, belt driven, with plain box table.

This covers but a small part of our stock of used tools. Please

# The Strong, Carlisle

1394 W. Third St., Cleveland, Ohio

# Attractively Priced

4' Arm Hammond High Speed Sensitive Radial Drill with tapping attachment, motor driven, complete with motor and with universal table.

4' Mueller Plain Arm Radial Drill with tapping attachment, gear box single pulley belt drive.

5' American Triple Geared Plain Arm Radial Drill with tapping attachment, gear box motor drive, complete with motor and plain box table.

6' Mueller Plain Arm Radial Drill with tapping attachment, gear box single pulley belt drive, with box table.

24° Gould & Eberhardt Back Geared Crank Shaper, single pulley belt drive, complete.

30°x30°x12¹ Gray Spur Geared Planer, two rail heads, motor driven, complete with D. C. variable speed motor.

36°x36°x12' Niles Spur Geared Planer, two rail heads, reversing motor drive—direct connected with D. C. variable speed motor and control.

18º Libby Type "A" Heavy Duty Turret Lathe, motor drive (3).

26 Libby Type "A" Heavy Duty Turret Lathe, motor drive (3).

No. 3-A Warner & Swasey Late Type Steel Covered Ways Hollow Hexagon Turret Lathe with complete chucking equipment, pump, arranged for motor drive, complete with A. C. motor.

60° Colburn Vertical Boring and Turning Mill with two swivel heads, chuck jaws, belt driven.

52° Bullard Vertical Boring and Turning Mill with two swivel heads, with chuck jaws, arranged for motor drive.

No. 32 Lucas Horizontal Precision Boring, Drilling and Milling Machine, 3¾ spindle, with bars, belt driven (2).

No. 0 Giddings & Lewis Horizontal Precision Boring, Drilling and Milling Machine, belt driven, with boring bars.

No. 12 Barber-Colman Motor Driven Hobbing Mch. complete with mtr.

No. 11 Brown & Sharpe Plain Cylindrical Grinder, (2).

All of these Machines that are belt driven can readily be converted to motor drive machines.

end us a list of your requirements or write for our complete list.

# & Hammond Co.,

2832 East Grand Blvd., Detroit, Michigan

# LOW PRICES-LATE MODELS

#### THIS IS ONLY A PARTIAL LIST

#### \*GEARED HEAD LATHES

\*GEARED HEAD LATHES
1-14";12" LeBloud.
1-16"; 8' Lodge & Shipley.
1-16"; 8' Hendey.
3-16";16' Lodge & Shipley.
1-16";16' Lodge & Shipley.
1-16";16' Lodge & Shipley.
1-18";26' American.
2-18';16' American.
2-18';16' Monarch Helical Gear.
3-20'; 8' Monarch Helical Gear.
2-20'; 8' Lodge & Shipley.
1-20";16' Lodge & Shipley.
1-20""-40' "X11' Rahn Larmon.
1-22";10' Lodge & Shipley.
1-20""-10' Lodge & Shipley.

-30"-40"x11" Rahn Larmo -22"x10" Lodge & Shipley. -24"x 8" Hendey. -34"x12" Lodge & Shipley. -34"x14" Lodge & Shipley. -34"x14" Lodge & Shipley. -34"x14" Lodge & Shipley. -36"x24" Lodge & Shipley. -36"x24" Lodge & Shipley. -36"x24" Lodge & Shipley.

#### \*RADIAL DRILLS

1-3' Western. -3' Mueller.

1-5' Carlton Motor on arm. 1-5' American. 1-6' Western Triple Geared.

-6' American Full Universal.

\*VERTICAL BORING MILLS 1-24" Bullard New Era. 1-36" Bullard New Era.

All Other Makes up to 10'. \* HORIZ, BORING MACHINES -No. 3-A-3" Universal.

-No. 350 Giddings & Lewis. 1-No. 5 Defiance. 1-5" bar Niles-Bement-Pond. I-No. 31 Lucas.

\*SHAPERS

1-20" Gould & Eberhardt. 2-24" Gould & Eberhardt. 1-24" Gould & Eberhardt Invinc. 1-28" Columbia.

PLANERS **Belt and Reversing Motor Drive** All Sizes

### \* MILLING MACHINES

\* PLAIN 2-No. 1-B Milwaukee. 2-No. 2-M Cincinnati.

-No.2-B Milwaukee, Mtr.-in-Base, 2-No. 2 Cincinnati High Power.

1-No. 3-B Milwaukee.

2-No.3-B Heavy Brown & Sharpe. 1-No.4-B Heavy Brown & Sharpe, 1-No.4-Cincinnati, Rect. Overarm.

-No. 5-B Heavy Brown & Sharpe.

#### \* UNIVERSAL

1-No. 2-M Cincinnati. 1-No. 2-B Milwaukee.

1-No. 3 Cincinnati High Power. 1-No. 4 Cincinnati High Power.

\* VERTICAL

1-No. 3 Cincinnati High Power Motor-in-Base. -No. 3 Cincinnati High Power.

1-No. 3-B Milwaukee. 1-No. 3 Brown & Sharpe.

4-No. 4 Cincinnati High Power. 1-No. 4 Cinti Intermittent Feeds.

### \*GEAR HOBBERS

Single Pulley and Motor Drive 5-No. 12 Barber-Colman. -No. 36-H Gould & Eberhardt.

#### \*TURRET LATHES

2-No.1-A, No.2-A Warner & Swasey Timken Head. 1-No. 2-A Warner & Swasey 32"

1-No. 2-A wanter & Swassy of capacity.
2-No. 4-A Warner & Swassy.
1-28" Libby-International 74" hole.
2-No. 5-A Potter & Johnston.
5-No. 6-A Potter & Johnston.
4-14" Fay Automatic.

#### PLAIN GRINDERS All Makes and Sizes

UNIVERSAL GRINDERS 1-No. 13 Brown & Sharpe. 1-No. 1 Cincinnati. 1-No. 2 Bath Motor Drive.

#### PRESSES

PRESSES

-No. 4 Federal.
-No. 5 Federal.
-No. 2 V. & O., O. B. I.
-No. 2 V. & O., O. B. I.
-No. 20 Bliss, O. B. I.
-No. 302-C Toledo, 32" bet. uprights.
-No. 302-C Toledo, 32" bet. upr.
-No. 91-B Toledo, 32" bet. upr.
-No. 91-B Toledo, 32" bet. upr.
-No. 5-C Bliss, 44" bet. uprights.
-No. 5-C Bliss, 54" bet. uprights.
-No. 5-C Bliss, 54" bet. uprights.
-No. 5-C Bliss, 54" bet. uprights. 8' Chicago Steel Forming Press.

\* These Machines all arranged for single pulley or motor drive

Haymarket

HILL, CLARKE &

# SPECIAL BARGAINS

or nearen	DALLOALING
LATHES	MILLERS
34"x60" Fitchburg Lo-Swing\$ 250.	No. 14 Rock'd Pl., arr. m d \$ 475.
9"x18" Porter-Cable 190.	No.2 Milwaukee, all auto feeds 350.
12"x 5' Vernon, quick change 250.	No. 5-B Becker, 42"x16"x26" 450.
13"x 6' Reed 275.	No. 2 Brown & S., 28"x64"x18" 375.
13"x 6' Willard 225.	No.2 Pratt & Whitney Lincoln 75.
16"x 6' Pratt & Whitney 75.	No. 4 Hendey Lincoln
14"x 6' Flather 125.	Beaman & Smith Onen Side.
15"x 6' Flather 150.	72"x18" table
15"x 6' American, quick chge. 225.	24"x13"x20' Ingersoll Slab 750.
17"x 6' LeBlond, rap. prod 400. 20"x 8' Hamilton 500.	45"x38"x17# Ingersoll Slab 850.
26"x10" Whitcomb-Blaisdell 750.	50"x40"x'20' Ingersoll Slab 950.
25"x12' Le Blond 95% new 975.	No. 3 Beaman & Smith Eng.
26"x12' Putnam, arr. for m. d. 400.	Frame miller & cross borer, 92" between uprights, table
30" Streit Pulley 350.	4'x15' 950.
36"-44"x12' Springfield, m. d. 950.	No. 1 Foster Thread Miller 150.
54"x23' Pond 950.	No. 3-E Lees-Brad. Thd. Mill. 350.
No. 2 Niles-Bement-P. Axle 375.	
DRILLS	GEAR CUTTERS
22" Barnes All-Geared, S. O. 3 375.	18" Gleason Gear Generator \$ 500.
No. 25-24" Foote-Burt. 600.	16" Robey Smith Bev. Gr.Gen. 600.
4-spindle Sigourney	TURRET MACHINES
with 18"x18" head	No.2-1" Wood Tilted Turret \$ 250.
No. 3-12-spdl. Western mult.	No. 2-1" Millholland 250.
with 26" round head 250.	No. 3-14" Foster 200.
No. 26 A. C. Fox 36-spindle	No. 4-14" Millholland 250.
16"x32" head 950.	2"x24" lones & Lamson
8-spindle N. B. P. Arch Bar 300.	3"x36" Iones & Lamson 400.
3' Mueller Radial, m. d 750.	No. 6-2" Brown & Sharpe 400.
21' Gang (Carlton) 450.	24" Steinle, 64" hollow spdle 900.
BORING MACHINES	26" Libby 750.
Beaman & Smith Cylinder	24" Davis 150.
Boring & Milling Machine \$ 500.	1"x5" New Britain, 6-sp. auto. 250.
2-spdl., 6" bar Espen-Lucas Horizontal Boring Machine 600	18" Gridley, 4-spdl. auto 875.
Horizontal Boring Machine 600 5" bar Ingersoll	GRINDERS
VERTICAL BORING MCHS.	6"x18" Landis Seif-Contained \$ 475.
30" Flather, 30" 3-jaw chuck 600.	12"x36" Fitchburg 350.
34" Colburn 250.	No. 10-A Bryant Internal 350.
48" Putnam Car Wheel Borer. 500.	No. 20 Bryant Deep Hole 400.
51" Baush, rapid traverse 1250.	No. 23 Brown & Sharpe Gear
60" Pittsburgh 500.	Cutter Grinder 100.
61" Baush 1500.	12-spindle Defiance Valve 175.
72" Pond 900.	MISSELLANDOLIS
SHAPERS AND PLANERS	MISCELLANEOUS
32" Steptoe Shaper \$ 150.	No. 52 Hendley - Whittemore
36"x36"x16' Ohio	Comb. Punch & Shear \$ 135.
56"x42"x10' Gray	No. 8 Quickwork Rotary Shr. 135. 2" Pilton Slotter
72"x60"x10' Cincinnati 2000.	300 lb. Toledo Drop Hammer 150.
to any att Citicininations 4000.	and in Toleno Prob Hammer 100.

### Our Guarantee:

Your money back if you return a machine within thirty days, freight prepaid. No excuses necessary.

CO. of CHICAGO

645 W. Washington Boulevard

# **High Grade Machine Tools**

Lathes 54°x24° H. S. & G. Grd. Hd. M. D. 24°x22° Bradford, cone drive. 40°x20° H. S. & G. Grd. Hd. M. D. 26"x18" American, Q. C. 46"x18" Niles-Bement-Pond, Quick

Change H. D. 46°x 16' H.S.& G.Ged. Hd., late type 24"x15" Lodge & Shipley, Q. C. G. 36"x14" Lodge & Shipley, Q. C. 20"x8" American Grd. Hd., M. D.

late type.
30°x 10° Lodge & Shipley, 3 S. C. D.
D. B. G. Q. C.
18°x8° Reed-Prentice Grd. Hd. Q. C.
16°x6° Lodge-Shipley Sel. Grd. Hd.
14°x6′ Hendey Yoke Hd., late type.

Grinders Nos. 60, 65 and 70 Heald Grinders. 6\*x18\* Landis Plain, Self Contained. No. 11 Brown & Sharpe Plain. 10 x52 Landis Plain, Self Con No. 1 Diamond Surface Grinder, M.D. 10. Patt & Whitzey Surface, Nos. 2 & 2½ Bath Universal.
16\*x68\* Landis Self Cont. Crankshaft.
Modern Chaser Grinder.

Gear Cutters No. 4-48\* Brown & Sharpe, late type No. 12 Barber-Colman Hobber, dbl.

overarm, late type 18-H Gould & Eberhardt Hobber. 24<sup>st</sup> Gleason Bevel Gear Planer. No. 615 Fellows Helical Gear Shaper. 6" and 18" Gleason Gear Generators. Bolt and Pipe Threaders

1/4 Landis Double-Spindle.
1/4 Landis Sgl. Sp., Grd. Hd. m. d.
1 Acme Class "A" Single-Spindle,
2 Landis Sgl. Sp., lead screw attach.
2 Landis Double-Spindle. Boring Mills

34° Gisholi Vertical one turret head. 48° Colbum Vert. 2 nv. hds., late type. 60° Bullard Vertical 2 hds., S. P. D. 60° Niles Boring Mill, 2 heads. 12° Niles Vertical 2 heads. No. 32 Giddings & Lewis Horiz. Milling Machines

Vo. 5 Brown & Sharpe Plain. No. 4 Cincinnati, Plain. No. 3-B Milwaukee Plain, Double overarm. Late type. No. 3 Cincinnati, Plain. Nos. 3; 5-B; 6 Becker Vertical.

Write for Complete Catalogue-We Buy, Sell and Exchange

Nos. 2 and 3 Cincinnati High Power Plain. S. P. D. flange nose. No. 3 Cincinnati Vert. H. P., S.P.D. No. 2 Cincinnati Universal H. P. flange nose: S. P. D No. 11/2-B Milwaukee Universal, Double Over-arm; S. P. D. 5" Pratt & Whitney Automatic 18º Cincinnati Automatic, M. D. 24ª Cincinnati Automatic, M. D. No. 33 Kempemith Automatic. No. 7-H Becker Lincoln type. No. 1 Knight Miller and Driller. No. 3 & 3-E Lees-B. Thread Millers.

Planers 24°x24°x8' Gray Planer. 27°x27°x8' Woodward & Powell. 36"x36"x10" Gray, 2 heads. 26"x26"x12" Whitcomb-B., 2 heads. Radial and Upright Drills 5' Bickford Univ. S. P. D. gear box. 4' & 3' Cincinnati-Bickford, S. P. D. 4º & 3º Cincinnair-Bickford, S. F. D.
3º & 4º American Tr. Grid SPD, MD
22º Barnes Camel Back.
4º American Tr. Purpose, late type.
No. 2 Colburn Mig. H. D. 2-upindle.
3-up. Avey High Speed Ball Bearing.
4-Spdl, Foote-Burt Independent Feed. 6-spindle Rockford 20° B. G. P. F. No. 30 Natco Multiple Spindle. No. 40 Natco Straight Line Multi.

Shapers 16° and 20° Gould & E. High Duty. 16° & 20° Stockbridge, Motor Drive. 20° Steptoe, S. P. D. 24° Gould & Eberhardt; High Duty. 24º Queen City heavy duty, cone dr. Miscellaneous

No. 3 J. N. LaP. Broaching Mche. 80 lb. Bradley Cushion Helve Hammer Nos. 1 & 2 Davis Keyseaters. No. 3 Baker Keyseaters. No. 42 Toledo Horning Presses. No. 94 Ferracute Dbl. Cr. Grd. Press. No. 56 Adriance Dbl. Cr. Str. S. Press. No. 76 Toledo Open Bk. Gap Frame. Wickes Punch & Shear, 48 throat, 11/4 thru 11/4. 11/4" thru 11/4". High Spd. Rivet, I.AA; 11/2B; 2AHD. No. 2 Garvin Vertical Tapper. No. 2-A. W. & S. Turret Lathes. No. 4 W. & S. Univ. Turret Lathe. No. 1-B Foster Univ. Tur. Lathe m. d. 100 K. W. Federal Butt Welder. Shuster Wire Mches. 1/4" to 3/4" Capts.

Cincinnati Machinery & Supply Co., 28 West Second St., CINCINNATI, OHIO

# HIGH SPEED BALL BEARING DRILL PRESSES

FOR immediate shipment, a splendid lot of one, two, three and four spindle presses made by Allen, Avey, Henry & Wright, Sipp, Leland-Gifford and others—at prices you have been waiting for.

Ask for our prices before you buy elsewhere.

INDIANAPOLIS MACHINERY & SUPPLY COMPANY, INC.

1959 So. Meridian St., Indianapolis, Ind.

## "Restored" Machines

-B. & Sharpe Nos. 1, 2, 3, 13. 9-Norton 18x96, 14x72, 14x50, 10x72. 2-Blanchards, No. 16 Surface. 3-Diamond Surface Nos. 2. 3. 8—Heald Nos. 69, 65, 79, 72. 3—Besly No. 1, No. 2, No. 10. 4—Landis 16x48, 16x68, 16x72. 1—Sellers No. 1 Drill. 1-B. & Coleman No. 2 Hob. 1-B. & COIEMAIN NO. 3 THO TURRET LATHES AND SCREW MACHINES 9-W. & S. Nos. 2, 4, 6, 2-A, 3-A. 3-Libby 18", 28", 6-P. & W. 8", 1", 18", 2", 3", 6-P. & W. 8", 1", 18", 2", 3", 4-Acme 1", 18", 28", 3", 4-Gisholt 21", 24", 28", 34", **AUTOMATICS** 6-B. & S. Nos. 00, 0, 2, 2-G. 9-Gridley \$, \$, 1\$, 1\$, 2\$, 2\$, 2-14" Fays. LATHES Putnam Wheel. -90" -84x36 Putnam. -72x28 Putnam. -72x28 Putnam. -72x58 N-B-Pond. -59x28 N-B-Pond. -56x18 N-B-Pond. -50x36 Pittsburg. MILLERS -48x24 N-B-Pond -48" N-B-Pond Wheel, -42x39 Putnam. -42x28 N-B-Pond -36x14 Bridgeford. -30x24 bridgetora, -30x22 American, -30x12 American, -24x12 Schumacher-Boye, -21x10 Le Blond, -18x10 Lodge-Shipley, -18x10 Hendey, -17x10 Le Blond, -16x8 Monarch. 1-16x6 American. 6-14x16' L. & S. Selective Head. -14x5 Monarch. PLANERS -24x24x10 W-Blaisdell. -30x30x8 N-B-Pond. -30x30x12 Cincinnati. -36x24x12 D. & H. Openside. -36x36x8 Cleveland Openside. -36x36x10 N-B-Pond. -36x36x14 N-B-Pond. -42x42x12 N-B-Pond.

-42x42x22 Cincinnati.

-60x60x18 Cincinnati.

1-96x48x12 D. & H. Openside. DRILLS (Upright) -Autora 22, 24, 28, 30" 12-H-Wright 1, 2, 3, 4, 8, 6 spindles. 6-Edlund 1, 2, 8, 4 Spindles. 3-Minster No. 2-D. 4-Colburn Nos. 1-D, 2D, 4D. DRILLS (Multiple Spindle) 3—Moline Nos. 11-D, 8-D, 2-D. 4—Baush Nos. 2, 3, 4. 6—Natco Nos. 12, 13, 14, 15, 37. DRILLS (Radial) -3' American Plain. -4' Cincinnati-Bickford Plain. -6' Fosdick Plain. -7' Dreses Plain. -8' American Triple Purp. Plain. -6' American Universal. -5' Dreses Universal. GEAR CUTTERS 4-B-Coleman Nos. 3, 12. 4-B. & Sharpe Nos. 13, 3, 5. - Newark No. 2-B. - G. & E. Nos. 18-H, 12-H. - Gleasons, 6, 11, 15, 18, 24, 77". -36" Gleason Gear Planer. -Cincinnati Plain Nos. 2, 3, 4, 5, -Cincinnati Vert. Nos. 3, 4, -Cincinnati Universal No. 2, 3, 4, -Milwaukee Pl. No. 1.42-B, 3-B, -Milwaukee Vert. No. 24 -Kempsmith Plain Nos. 23. 2—Kempsmith Univ. Nos. 2 5, 3 5—LeBloud Univ. Nos. 2, 3, 5 5—LeBloud Univ. Nos. 2, 2†, 3, 4, 2 2—Knight No. 2, No. 3, 5 5—Becker No. SD, CS, 2, 5, 6, 6 BORING MILLS -16' Betts Vertical. -12' Niles Vertical. -10-16" Niles Extension. -100" N-B-Pond Vertical. -100" N-B-Pond Vertical.

-96" Betts Vertical.

-84" Betts Vert. Boring Mill.

-72" N.-B. P. Vertical.

-72" Sellers Vertical.

-72" King Vert. Boring Mill.

-82" N-B. Pond Vertical.

-82" Gisholt Vertical.

-84" Colburn Vertical.

-84" Dand Vertical.

-44" N.-B.-Pond Vertical. -24" Bullard Vertical. -54" Bar Niles Horizontal. -44" Bar N-B-Pond Horizontal. " N.-B.-P. Duplex Horiz. 1-No. 3 Barrett Cylinder.

Partial List of our stock; send us your inquiries. Ask for our Monthly Bulletin.

#### Simmons Machine Tool Corp'n Buffalo, 810 Morgan Bldg. New York, 149 Broadway Albany, 1700 Trey Road

## PRESSES and SHEARS

8' Chicago power bending brake, 14 ga., 2 H. P. 220 volt, 3 phase, 60 cycle motor.

Pels armor plate combination punch and angle shear,

220 volt, 3 phase, 60 cycle motor. 124 Ohl under drive square shear, 16 cap., 5 H. P. motor. No. 426 Hamilton double crank press, 8 stroke, 42 bet. uprights, 10 HP 220 volt 3 phase 60 cycle motor.

No. 781/2 Bliss tie rod frame press, 12" stroke 36" be-

tween uprights.

No. 3 Consolidated open back inclinable press 3" stroke. No. 2 Consolidated open back inclinable press, 2½" stroke. Gibbs circular and straight seam welder, 40" depth throat, for 18 ga. used very little. Excellent condition.

## MACHINE TOOLS

No. 14B Milwaukee vertical miller, power feed rotary table, very fine condition.

No. 3H LeBlond plain miller, with heavy vert. attachment. No. 6 Becker vertical miller, with rotary table.

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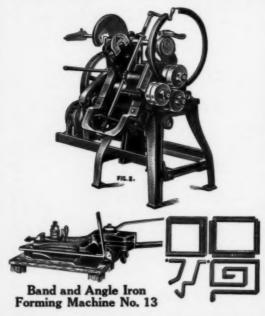
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